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Rich in appearance—distinctive in chocolate flavor

The finest chocolates are made with *Peter's "Couvertures"*

NO HIGHER tribute can be paid to the distinctive quality of Peter's "Couvertures" than their widespread adoption as coatings for leading brands of fine candy. For, superior quality in every ingredient is of paramount importance to the large-scale manufacturing confectioner.

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The Peter Coating line covers every chocolate-making need. It includes Milks, Vanillas, Sweets, Bitter Sweets and Liquors

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First Producers of Certified Colors

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Uniformity **Purity**

Strength **Solubility**

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" " C. D. M. Green
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and many others, which will produce those beautiful and delicate shades of nature.

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The Progressive Manufacturer can only establish a quality product by using the best material; there are no ingredients in which confidence in the producer is so absolutely necessary or important as in Colors and Flavors. **Our 75 years of business experience is a guarantee of quality products, and a sound basis for your confidence.**

GENUINE FRUIT EXTRACTS

Our Genuine Fruit Extracts are not only so-called, but the **product of the actual fruit whose name they bear.**

The production processes are by special apparatus and methods which retain and preserve all the finest and most delicate esters and aromas of the **finest selected fully ripe fruit picked where the most lucious of its kind is grown.**

We shall be glad to have an order for pint samples and suggest our **wonderful Genuine Fruit Strawberry and Raspberry Extracts.**

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Editorial

ROBERT RANDOLPH, Editor

On Making a "Miserable 10%"

PERHAPS it would be trite to say that there are two ways to figure profits, but when we hear that so-and-so is only making 10 per cent gross manufacturing profit, it is not so obvious which method he is using. The candy manufacturer is apt to jump to the conclusion that this 10 per cent gross is ridiculously small and that his competitor is "price cutting." In fact, this indictment is generally laid at the door of the chains.

As a matter of fact, however, the chains are making what to any wholesale manufacturer of reasonable aspirations would seem a satisfactory profit. On a package costing 50c to turn out a profit of 10c a pound would mean to one manufacturer 20 per cent, which we think he would consider a fairly decent margin. Another manufacturer, one of the chains perhaps, would add the same 10c lb. profit and consider that they were only making 10 per cent inasmuch as they compute their profits, not on cost, but upon their selling price.

Thus, on a package of assorted chocolates designed to retail for $1.00, a chain would figure the profits somewhat as follows:

		Per cent profit, if figured on the selling price	Per cent profit, if figured on the cost
Cost	.50		
Factory profit	.10	10%	20%
Store profit	.40	40%	66⅔%
Retail price	1.00		

Some of the chains also have a habit of including a flat figure of so many cents per lb. as "overhead" to all classes of candy retailing between certain limits. Notwithstanding this, the 10c lb. is still considered "gross" profit, thus, on a $1.50 assortment:

Raw material, Packing material, Direct labor	.69
"Burden" (indirect labor, etc.)	.06
Factory gross profit	.15
Store gross profit	.60
Retail	1.50

When we consider further that some of the chains turn over their stocks from 25 to 40 times a year while the wholesale manufacturer feels himself lucky if he turns it over 12 to 15 times a year, the chains are not losing any sleep over their "miserable 10 per cent profit."

What Is a "Manufacturing Confectioner?"

THE increasing specialization of manufacturing activities and the breaking away of large bodies of these specializing manufacturers from the parent confectionery industry has raised the perfectly logical question—just what *is* a "manufacturing confectioner"? Which of these various disassociated groups have remained sympathetic to their original ideals and are still fulfilling the basic mission of confectioner?

It is maintained on the one hand, that the term "manufacturing confectioner" takes in candy alone. Those who hold this view regard their newer contemporaries somewhat in the light of interlopers, encroaching more and more upon a domain hitherto sacred unto themselves, while contributing nothing of any special value to the progress of the parent industry.

Elsewhere we find a broader view. Included in the picture are the manufacturers of chocolate and the butter pressers; the manufacturers of ice cream and the ice cream confections; the manufacturers of semi-prepared products such as caramel pastes and nougat creams; the biscuit and cracker manufacturers and the like; all these groups are producing *confections* in the true sense of the word. It is to this latter definition that we subscribe.

All of these manufacturing groups are in a sense, offshoots of the one great confectionery industry. Minor differences may be pointed out either in the methods of manufacture, the manner of distribution or in consumer approach, yet all are fulfilling the selfsame function. They draw upon a common fund of raw materials—their tech-

nical problems are intricately interwoven —they find themselves engaged in a single mission. That mission is to *satisfy man's sweet tooth.*

Candy sales may recede; ice cream sales may go up—but look at the consumption of sugars! Regardless of temporary conditions in any one of these groups, the sum total of man's desire for sweets is expressed in a steadily mounting per capita consumption of the basic sugars from which these food luxuries are made.

Fashions in sweets come and go like Paris styles. There is nothing unusual about the operations of this principle. It has been going on for centuries. Just now, the "lay-off-sweets-and-grow-thin" faddists are losing weight with candy and taking it on with ice cream. Inconsistent? That's us.

It is ridiculous to think that confectionery is losing ground. Since the beginning of time, history has seen a constant struggle for precious things to eat. The desire to control the world's stores of sugars, flavors, spice oils and the like, has precipitated more wars than the whims of kings. Down through the ages, man's consumption of sweets has constantly increased. The manufacturer who anticipates the trends in confectionery "styles" today, will ride on the crest tomorrow. Dieting fads may come and go but in one form or another, the consumption of "confectionery" will go on forever.

We of THE MANUFACTURING CONFECTIONER shall go on serving that broader field of the true manufacturing confectioner, whether he be a candy maker, an ice cream manufacturer or a biscuit confectioner. His problem shall be our problem and his success, our success.

Sic Semper Tyrannis

LIKE a sober moment in some great comedy-drama where the villain clutches fiercely at the hero's throat and pushes him inch by inch toward a precipice from which not even his six months' reputation in the candy business can save him from the yawning chasm below, comes this javelin thrust of a trade paper editor at the villain, who in this case is a personification of the cocoanut butter refining industry:

"The melting point of cocoa butter is around ninety degrees, while the melting point of cocoanut butter, a decidedly different product, is somewhere around seventy-five. This bit of more or less technical information obtrudes itself into this page by reason of an incident we have heard of in which a candy manufacturer has been, for all practical purposes, ruined because either the manufacturer from whom he bought his coatings or he, himself, sophisticated the coating with cocoanut butter.

"Result—thousands of dollars' worth of Christmas goods were no sooner delivered to jobbers and dealers than it commenced coming back to the manufacturer. One contemplates the mess it must have been.

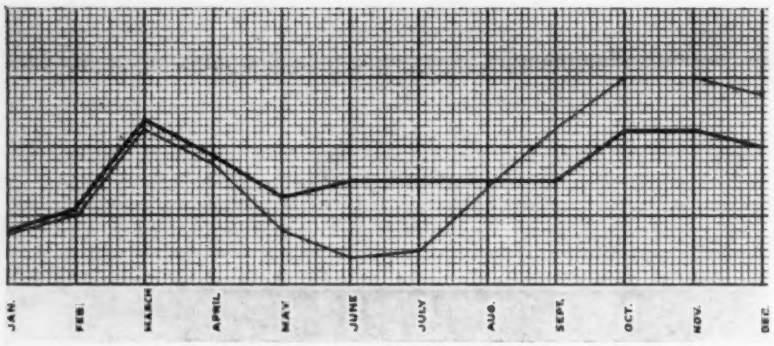
"Picture what this man is up against—it means just what you think it does, exactly. He has been brought to the verge of financial ruin and he may be pushed over. In any case the fruits of years of hard work and effort have slipped from him and he is faced with commencing all over again."

Horrible!—too horrible for anything. One wonders how our hero manages to escape being run down by horsecars in this perilous age of matches and everything. 76° oil in a chocolate coating! Who ever heard of such a thing? If a confectioner ever mentioned that he expected to use such an oil in his coating, no self-respecting refiner would agree to sell him. Very probably he would report him to the State Lunacy Commission for observation.

76° oil has many legitimate uses in a candy factory—nut roasting, slab dressing—there are perhaps a dozen or more of these uses in the average plant. But when it comes to chocolate, there is not a cocoanut oil refiner in the country who is not spending thousands of dollars in advertising the use of high melting point and high softening point hard butters for this purpose and many thousands more for constant research on this most difficult problem of chocolate graying. The hard butters range in melting point from 90° to 96°. Ordinary cocoa butter will test from 90° to 94°. Only in Eskimo pie coatings, where maximum fluidity is required at low temperatures, are the lower tests of hard or plastic butters recommended. Here the ice cream manufacturer may require as low as 84°—but we have never heard of a refiner selling anything lower than that even for this purpose!

The development of hard cocoanut butters which enable coatings to withstand to a better degree the onslaughts of varying weather conditions stands out as one of the greatest achievements in this field during the past quarter of a century. To hold otherwise is to profess ignorance of this highly important contribution to our welfare.

It all comes back to the principle that technical papers should be written by technical persons. "Heat-struck," which is continued in this and subsequent issues, deals with this much man-handled problem in a concise, readable and thoroughly practical way.



Taking the "cuss" out of summer for the candy manufacturer. Chart shows application of long-range storaging to a plant of 4,000,000 pounds production. Light line— seasonal variations in production before introduction of cold storage; heavy line— seasonal variations in production under the newly-adopted stagger system.

Utilizing the Cold Storage Warehouse to

Stagger Production

BY NORMAN W. KEMPF

SEASONAL fluctuation in the consumption of confectionery has long been one of the industry's most difficult problems. Plant organization capable of turning out the enormous quantities needed for the holiday trade must stand idle, eating its head off during long periods of slack, or be arbitrarily cut down by laying off experienced help at the peril of losing it and having to break in "green" material at a time when speed, familiarity and efficiency are most needed.

The efficient and economical operation of any industry can only be obtained by a uniform rate of production, with trained personnel working at top speed throughout the year. Because of the highly perishable nature of candy, this Utopian condition has been slow in coming. Much valuable progress has been made during the last few years, however, and we are now in a position to "stagger" production in many lines of chocolate coated goods.

Pioneer Work of the Bureau of Chemistry

Investigations carried out independently by several large manufacturers, and by the U. S. Bureau of Chemistry have shed a new light on this difficult problem, several large firms having already developed to their satisfaction and profit a practical method of keeping their plants at uniform production throughout the year. A complete report of the pioneer work done by the Bureau of Chemistry on atmospheric conditions for storage of chocolate covered goods has been published in this magazine (See The Manufacturing Confectioner, July, 1926).

A modern giant of the cold storage industry. (Courtesy, Merchants' Refrigerating Company.)

The plan is to manufacture and pack during the slack summer months those numbers which have been shown to keep well in storage, and to store the finished packages in investigated storage warehouses until such time as they may be needed for the Thanksgiving and Christmas holidays. Not only does this stagger plan provide steady summer employment for the experienced crews, but it lightens the load in the inevitable last minute rushes which precede peaks in retail demand. With intelligent planning it is possible to maintain a fairly uniform rate of production in this manner, and have the factory running at maximum efficiency during the entire year.

The first prerequisite to success in long range storaging of package goods is a properly air-conditioned package room. As has been demonstrated by Dr. Paine in his valuable work at the Bureau of Chemistry, if the goods are packed in an atmosphere of high humidity, there is danger of deposition of moisture on cooling when the goods are brought into cold storage, with resultant loss of glass. On the other hand, goods packed in air-conditioned rooms, at relatively low humidity will suffer no damage when transferred to cold storage, even at low temperatures.

Need of Flexible Plant Storage Capacity

Assuming that the cold storage warehouse to be utilized is at some distance from the factory, it is also important to have sufficient **cool** storage space inside the plant to comfortably accommodate from four to six days' production. In fact, the success of the stagger plan is based on the fact that high summer temperatures occur only in waves of comparatively short duration, and are generally interspersed with a sufficient number of cool days to permit safe transportation. However, a prolonged heat wave might make it necessary to store the accumulated production in the plant

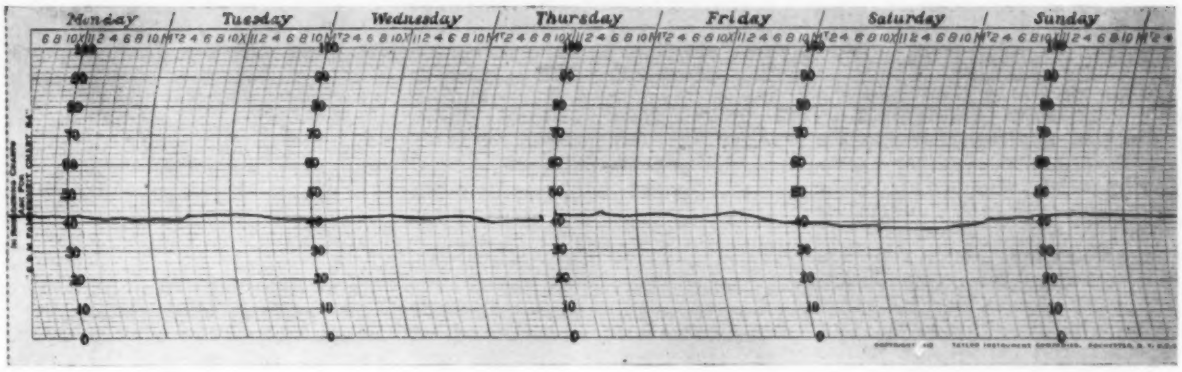


Chart B. Actual reading from an eight-day recording thermometer placed in one of the warehouses investigated by the candy manufacturer. Failure to maintain the temperature required led to the selection of another warehouse.

until it is safe to transfer it to the warehouse, and the factory stock rooms must be planned to meet this contingency. Transfers should never be attempted on hot humid days, unless specially insulated trucks are used, and then only with the greatest caution. The actual maximum temperature at which it is safe to transport, is determined by many factors: the distance to be covered, the type of truck used, likelihood of traffic delays, etc. If the distance is short, say a few blocks, and the candy packed in corrugated cartons, it will be safe to transport to the warehouse even if the outside temperature is in the nineties, as the carton protects the candy for some time. However, if the warehouse is an hour's run from the plant, and the truck has to stand in line before receiving permission to discharge its cargo, it is wisest to wait for an outside temperature below 76° before risking the trip.

Selecting a Suitable Warehouse

After the proper conditions have been met in the plant, the next step is the selection of a suitable cold storage warehouse. Just any cold storage warehouse will not do. For the safe storage of candy, the following conditions are essential; a uniform temperature, low relative humidity, and freedom from foreign odors. Candy is best stored in a room by itself, so that proximity to substances which might affect it can be avoided, and the proper temperature and humidity conditions maintained without interference from moisture-emitting products such as apples, potatoes, etc.

The most satisfactory temperature for candy storage has been found to be around 45° Fahrenheit. Lower temperatures can be used successfully, but greater caution must be used in making withdrawals. But even more important than the actual temperature is the uniformity with which that temperature is maintained.

Comparative tests made with the same product in different warehouses showed that chocolate coating retains its gloss far better in a warehouse which maintains a rigid control of temperature. Chart "A" was taken from a recording thermometer placed in such a warehouse, and shows a smooth, even line, without fluctuations. Chart "B" was taken from a thermometer in another warehouse. A comparison of the two explains why the coating stood up better in house "A."

The method by which the refrigeration is carried into the candy room is also important. A brine pipe system is preferable to a direct expansion system, not only because it gives greater uniformity of temperature, but also because of the ever-present danger of ammonia leaks in the latter system. An ammonia leak, however small, will result in the

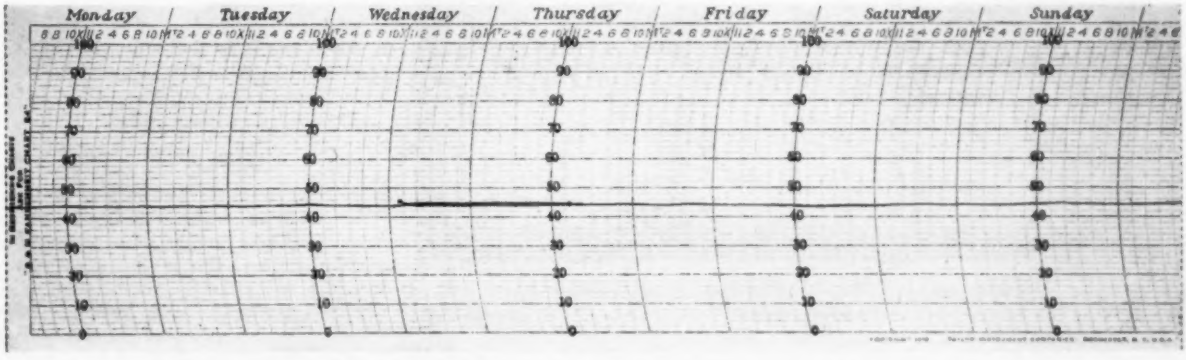


Chart A. The unwavering fidelity of the needle-point to the required 44° F., resulted in the confectioner's selection of this warehouse for a practical demonstration of the stagger system

darkening of any nutmeats used in topping.

Other Factors of Safety

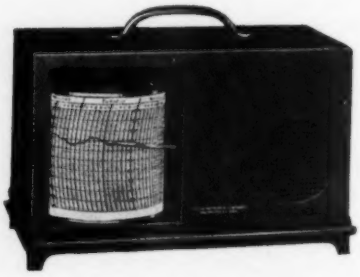
High relative humidity in the cold storage room results in a decided loss of gloss, if not in the actual formation of sugar bloom. During a trial conducted in one warehouse, a quantity of water spilled over a carton resulted in damage to all the candy stored in that section of the room. Therefore, a dry room is vital to perfect preservation of the candy. This condition can be assisted by the use of a small amount of unslacked lime in the room. The lime absorbs the excess moisture, and also helps to sweeten the air in the room.

The presence of other merchandise in the candy storage room should be avoided. Many fruits and vegetables ordinarily stored in public cold storage warehouses give off odors which are readily absorbed by chocolate covered candies. The list includes lemons, oranges, grapefruit, canteloupe, onions and cabbages. Of course, fish, hides and similar odoriferous products would be fatal to candy.

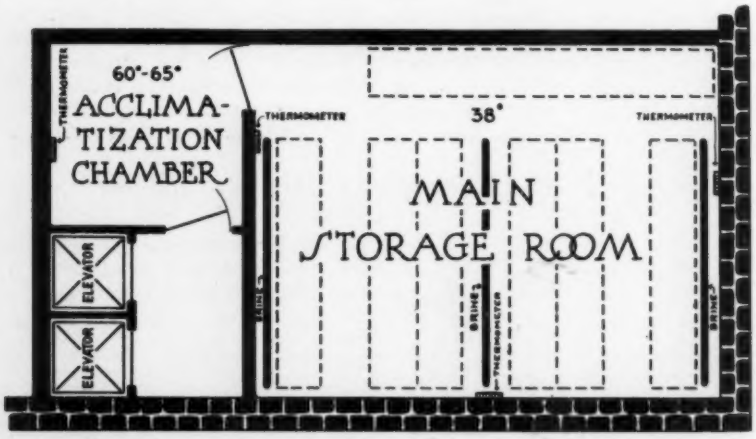
Besides, the presence of general merchandise in the candy storeroom means frequent opening of doors for entry and removal, with a fluctuation of temperature following each opening. It is always advisable to inspect the room chosen with an "open nose," so to speak, in order to determine if any of the above mentioned products have been stored in it at a recent date, as rooms often retain these odors for a year or more.

Types of Candy Suitable for Long Range Storaging

Having chosen a suitable warehouse, and provided proper facilities for packing the candy, the next point to consider is the type of candies best suited for storage. Experience has shown that while most types of chocolate-coated candies store beautifully, there are a few bad actors which will not store well under any conditions. The trouble makers are mostly centers containing a low-melting oil. For example, a nut brittle, in which the nut has been subjected to a roasting temperature, will turn chocolate gray very rapidly. The oil from the nut passes through the coating and kills the gloss.



Type of recording thermometer used in tests



Where the optimum candy storage temperature of 45° F. is not available, it is possible to employ ordinary cold storage temperatures, say, around 38°. Under these conditions it is nececsary that the goods be gradually "acclimated" prior to withdrawal to warmer temperatures. Illustration shows typical floor plan of store room and connected acclimatization chamber in a modern cold storage warehouse.

The same thing applies to a lesser extent to the chocolate-covered caramels. The milk fat set free during the cooking of the caramel penetrates the chocolate, resulting in grayness. Strange to say, chocolate-covered nuts hold up very well. For some unaccountable reason, where the nut is alone, the oil does not separate to such an extent, and the coating is not damaged. Nougat pieces containing the cut surface of nuts on the surface of the center, will turn the coating gray in spots; only those portions of the coating near the nut becoming gray.

The centers of assortments for storage must be chosen with care and foresight. If your regular assortments contain such pieces, it is usually a simple matter to substitute for these in the storage assortment, pieces which can be stored safely. However, where it is necessary to employ the trouble makers the danger of oil penetration can be reduced somewhat by giving these pieces a heavier coating. Nut brittle centers should be avoided at any cost, as this type seems to be able to penetrate almost any thickness of coating.

Creams can be "timed" with invertase so that they will be soft when removed from storage. Cordial centers can be cooked somewhat higher than normally, and given an extra thickness of coating to prevent leakage.

Experiments made under actual storage conditions have demonstrated that the corrugated board carton is ideal for package goods for storage. The corrugated board is an excellent heat insulator, and protects the candy during transportation to and from the warehouse. While in the warehouse it acts as a buffer against any sudden or unusual fluctuations. It also affords excellent protection against moisture. The cartons provide convenient units for packing and stow away well.

Storing Hard Candy

The storage idea has also been applied to hard candy in glass jars. Solid-center hard gloss candies packed in sealed glass jars store remarkably well in a cold, uniform temperature. A jar of a well-known make of hard candies was stored at 32°F. for a period of two years. The hard centers were still in perfect condition at

the end of this time, but buttercups and jelly-filled pieces had begun to grain off and lose their luster, owing to the moisture in their centers. In the storage of hard candies, uniformity of temperature is extremely important, as it prevents the so-called "breathing action" of the jars through slight leaks in the seal, due to a fluctuating temperature.

If the cold storage plan is put into effect, great care should be taken if withdrawals from the warehouse are necessary during the summer months. This caution is especially needed where the candy is stored at a temperature lower than 45°. If withdrawals are made when the outside temperature and humidity are high, damage is almost certain to result. The work of Dr. Paine at the Bureau of Chemistry conclusively demonstrates that atmospheric humidity is the controlling factor in determining the nature and extent of this damage.

Using the Local Weather Bureau

High summer temperatures are usually accompanied by high humidity, so a consultation with the local weather bureau is necessary before attempting to withdraw candy at such times. There are always some days in the week when conditions are such that a safe withdrawal may be made. Some warehouses have rooms in which the packages can be tempered at an intermediate temperature, say around 65°, so that the danger of sweating is reduced. However, in the normal operation of the stagger plan, it is seldom necessary to withdraw goods before cool weather sets in, as the factory will ordinarily have no difficulty keeping up with the summer demand.

Wherever the plan has been used, great savings have been affected; the economies in labor and general efficiency in production more than paying for the cost of storage.

Private Letters of a Reformed Candymaker to His Pal

No. 1

Dere Pete,

YOU said it, Pete. This candy business is still an old-fashioned German industry and a lot of them haven't waked up yet to the American way of doing things. That job you had at Seattle had nothing on the one I just bumped into here. You know the kind—"We've been making these goods this way for going on twenty years, so you can't fool us with any of your new-fangled ideas."

The first couple of days I just sort of moped around and took things in. I suppose the boys must have thought I was a new house detective or something, but, anyway, I find it pays to save the talking until later. I made up my mind to tackle the fondant department first, as the lineup looked mighty queer. Here they were cooking 75 lb. batches on gas stoves and lugging every batch across the floor to the ball beaters when they had a perfectly good high pressure steam kettle hooked up plumb against the beaters. The ball beaters were the large ones—seven foot; think of putting only 75 lbs. on one of those elephants!

I asked the foreman why he didn't use the steam kettle seeing as how it was so handy to the beaters, and why he didn't cook larger batches. What do you suppose he said? "You just **couldn't** use steam for cooking this sort of fondant, and if you put more than 75 lbs. in the beater it wouldn't be any good." But I'll say this for the old bird, after he realized that I wasn't trying to pull any Houdini stuff on him he cooperated with me in great style. A couple of days later we cooked 150 lbs. by steam and put the whole business on the seven-foot beater. You should have seen the surprise written all over that fellow's face when he saw how the finished batch came out and figured how much time we had saved over the old way. After he had cooked a few batches this way by himself you couldn't have paid him to go back to the gas stoves. He was completely sold.

You guessed it, all right. We ripped out the stoves about a week or so later and canned a big husky twenty-five-dollar-a-week helper who used to stand around to carry the batches over to the beater as they were cooked.

Come to think of it, they had another nineteenth century idea in that department about egg whites. Nothing would do but they had to intercept the new laid egg in its passage from the hen in order to make good fondant. Frozen whites? Sacrilege! No, the yolks had to fatten the garbage can (as though a garbage can in that plant ever needed fattening!). Yolks that my wife would have put in a birthday cake or something. It makes me shiver to think. I persuaded the foreman to make a few batches with me using frozen whites, and he just couldn't help but agree with me that they were whiter and mixed better than fresh whites.

Regards to the wife. I have a bookful to write you on some of the queer old ideas I've been running into.

So long for now,

Joe.

The Chemist's Biggest Job Is

Trouble-Shooting

says Stroud Jordan, who tells us about some of the kinky problems which come up in the day's work in a modern confectionery factory

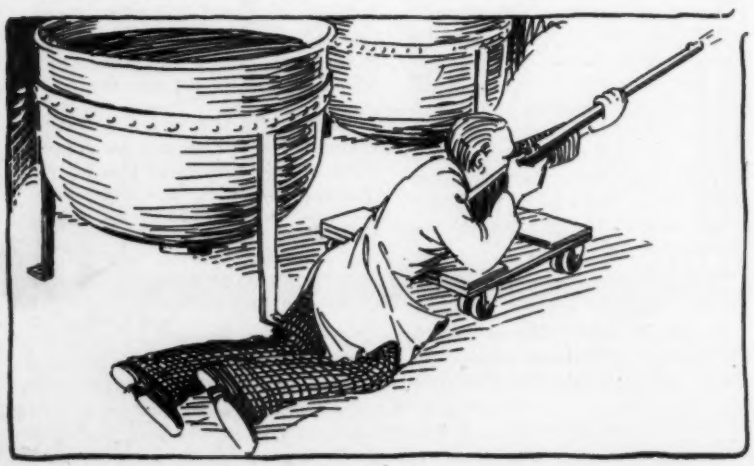
Look to Your Water Supply

THE materials incidental to confectionery manufacture are many, but one of the most important and most often neglected is a pure water supply. In some plants we find two kinds of water being used: well water pumped from wells drilled directly under the plant, and the usual city or community supply. For industrial purposes it is often economical to use well water, but there are times when this water is unfit for boiler purposes and the cost of purifying it precludes its use. I recall an interesting instance of this where the chemist's ingenuity saved the plant a good deal of time and money.

The water supply in question had formerly been well water. Subsequently, after several valuable object lessons the plant decided to pay the extra charge for city water in order to prevent boiler trouble, and the lines were so connected. Some time afterward the plant engineer had his attention called to a distinct rise in the hardness of the return water to the boiler supply tank, a fact which he felt must be attributable to having made a wrong connection somewhere down the line. The chemist was requested to draw samples from every faucet and hot water return, as well as from traps on kettles, and to analyze these in an effort to locate the point at which hardness occurred. This would have taken weeks of work and in the end would have been of doubtful value.

Instead, it was suggested that a time be set and that the chemist add sufficient indigo to give a perceptible blue tint to the tanks of well water on the roof of the plant. The theory was that if the city supply lines and the well supply lines had been connected up at any point, the blue water would show up at that point.

When this was done, the foremen were notified to watch all faucets for blue water, and the engineer put his assistant on the job to watch for blue color in the return boiler water. This thorough and systematic check required the time of the chemist and a helper for less than two hours, at the end of which time the correctness of the connections had been definitely ascertained and the plumbers absolved from responsibility for the hard water. A reliable check had been made over the whole system with a minimum expenditure of time and a few ounces of indigo, and removing once and for all the unpleasant suspicion that the two water systems had been accidentally joined together.



Belt Dressing that Works for the Belt Manufacturer

THE replacement of worn belting throughout the factory represents an item of considerable cost when taken over a period of a year. As a rule, little or no attention is paid to the belt dressings which are used and it might be worth while to have a chemist check over this material. No reputable house would dare to market a dressing which would be harmful to the belting, but some of the smaller suppliers offer, and some home-made concoctions are used, which appreciably shorten the life of the belting. The writer has one case in mind where such a dressing had been used for some time before the chemist got on the job and found out what was the matter. It was rosin oil and lime, in the form of a rosin oil soap, but there was free lime present which did lots more to the belting than make it stick to the pulley. The belt rotted out in record time and it was one continual round of replacement, inconvenience and delay. With the elimination of this dressing and the substitution of one which fed into the belt a material natural to the leather, the life of the belting was naturally lengthened and the cracking stopped. The possible yearly saving on such items as this is well worth a chemist's investigation.

The Mystery of the "Black" Walnut!

WHO is there among the manufacturing fraternity who does not at some time or other experience the "joys" of the returned goods evil? The defect might not necessarily have been due to faulty manufacture or to any negligence on the manufacturer's part, and yet back it comes. Round-trip candies, someone has called them. Various are the troubles and conditions which the chemist is called upon to solve in locating the whys and wherefores of these returns. The following interesting, and for a time most baffling, problem was solved by an intimate knowledge of the character of the product which shows how thoroughly the nature of these products must be understood by the chemist.

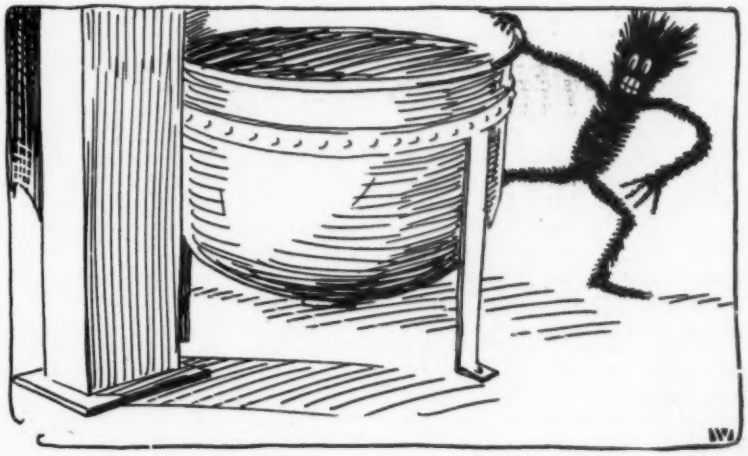
A box of candy from a returned lot of goods which the chemist received contained chocolate-coated creams with a half walnut topping. The walnuts had turned as black as the ace of spades. The chemist was called into the pow wow and asked whether he had ever seen such a condition before, to which he replied in the negative.

It was something which had never happened before, at least so far as anyone connected with the plant could recall, and it was with certain misgivings that the chemist took the sample back with him to the laboratory for examination. The afternoon wore away and the chemist went home, but always the black color of the nut toppings returned to mind and would not be downed. After dinner the dog demanded the usual walk which only those who have dogs can appreciate, and with the dog went also the constant picture of the black walnut halves as the mind of the chemist rambled on.

He tried to think of every possible cause imaginable and of the natural characteristics and peculiarities of each of the materials involved, but each condition was gradually eliminated and, at the end, the walnuts were still black and no plausible reason for it had been found. Then his mind reverted to colors in general and to agents which would transmute black to yellow or yellow to black, and with such thoughts came the recollection of color changes which had nothing to do with the case in hand, but which offered a remotely possible solution. Home and a bed temporarily relieved him of further anxiety over the problem until morning, but long before the boss had reached his desk a number of fresh walnut-topped candies had been placed in a closed container with a cup of ammonia placed alongside of them. When the boss arrived, it was to find a nice box of freshly blackened walnut toppings with a note from the chemist that a leaky ammonia pipe somewhere down the line had evidently been responsible for the trouble. The leak was located and, needless to say, eliminated in short order.

What Shot the Cocoanut Bonbons?

ANOTHER example of trouble shooting in returned goods will be of interest. The cocoanut bonbon is one of the most susceptible



of all candies to atmospheric changes and the peculiar part of it is that this type of candy is consumed largely in climates where there is to be found both excessive heat and humidity. Generally, the returned bonbons are found to be full of holes, as if they had been partly eaten by some insect or animal. The blame is generally passed on to some defect in manufacture, to bacteria or to any old reason which will suffice to allay doubts in the minds of those immediately concerned.

What has actually happened is that the candies have sweated; the sweat has settled on the outside, finding all the air bubbles in the fondant and dissolving the crust over the tops of these holes. Little craters are thus formed, the color is leached out, and as the miniature rain storm is reproduced over and over again, more and more fondant coating is sweated off, leaving the cocoanut center bare and the whole thing a repulsive looking mess. The goods may have been perfect in manufacture, but lack of proper precautions in subsequent handling has been their undoing.

Possibly they have been stored near the boiler room in some coastwise boat, in some retailer's damp cellar, or the manufacturer himself may have packed them too soon and not allowed them to dry out properly. This condition may be duplicated at will by merely sealing up fresh bonbons immediately and storing them in a warm place. In a short time they will present the same appearance as the "returned goods." Thus it is obvious that, no matter how much care is exercised in the production of confectionery, it must be handled and stored properly if it is to retain a salable condition for any length of time.

Discoloration

Many is the time when a product fails to turn out as expected and systematic trouble shooting becomes necessary. Perhaps the ingredients are not up to standard or some minor and legitimate change has been made in their composition, which has, nevertheless, thrown the monkey wrench into the gear box. But although we occasionally find defects or contamination traceable to these outside sources, more often the specks, discolorations or other imperfections which appear in our products may be traced to some purely factory neglect, such as burning or caramelization of the material during the process of manufacture.

The use of a continuous cooker for hard candy when used improperly gives us an excellent example of this sort of defect due to caramelization. As the name of the equipment implies, it is of value only when used as a continuous cooker. To allow it to stand without being washed or steamed out causes the syrup remaining on the coils, the plates and on the jacket to dry out and burn, giving the succeeding batch a distinctly yellowish color. This does not happen if the cooker is handled properly. Another example of burning and discoloration results from cooking a small amount of material in a high jacket kettle.

In still another sort of cooking process a large kneading machine is used and is heated by high pressure

steam in an outside jacket. That portion of the inner surface of the kettle which is covered by the scraping arms is always cleared of material with each revolution of the stirrer, but above this line the batch has been found to stick, burn, peel off and fall into the cook. It has also been found that a loss of one per cent is sustained through the removal of this burned material, which, of course, had to be scraped off and thrown away after every cook.

The kettle was in operation at a time when the factory manager passed through and the chemist was standing nearby when the question was asked as to whether or not something could not be done to avoid this occurrence. The chemist suggested lining the kettle with copper above the point cleared by the stirrer and to back up this lining with magnesia, but the factory manager was informed that the same suggestion had, at the chemist's continued insistence, been made previously and that the master mechanic had said that it could not be done. The mechanic was called up and told to try lining one kettle as the chemist directed.

The first lining was fairly satisfactory, but had other objections which were promptly eliminated in a new design. The whole battery of kettles was subsequently lined as suggested and is in use today. There has been no more waste from scrap, no loss of time in kettle cleaning after each cook, and no burned specks in the finished product.

In this connection it may be of interest to note that twenty minutes were lopped off the cooking time in these kettles by directing a current of air across the surface of the batch. This was simply the application of a well-known principle of removing vapor from the surface by mechanical means, rather than by applying sufficient heat to force it over the kettle top.

If we were to set down only a small fraction of one per cent of the actual changes and economies in plant manufacture which are directly due to the proper utilization of the chemist, a volume would be written. The record of his accomplishments in this field would not be complete, however, without referring to the special work done by scientific investigators on the standardization of colors and flowers. This is an outstanding example of the results which are obtained when science is applied to the industries. It is not even necessary to enumerate the examples, were it possible, for every manufacturer knows the difference between the colors and flavors of today and those of yesterday.

If you have not the service of a trained investigator, then by all means avail yourself of the first opportunity to get one and diligently use his services after you get him. Be prepared to direct his services into the channels where the most good will be obtained. Don't just employ a chemist because your competitor has one and you wish to be in style. Map out a series of specific needs for his services and after the experiments are made go through with it—apply the results to your problems.

To know *what to do, how to do it and why* are the prime essentials of any business.

Col. R. C. Foote From London

Col. R. C. Foote of Peak, Frean & Co., Ltd., fancy biscuit manufacturers, and their subsidiary company, Meltis, Ltd., of Bedford, makers of high class package candies, has been visiting many of the leading biscuit and confectionery manufacturers of America the past month. He has just returned to New York from a cross-country tour, stopping at Cincinnati, Indianapolis, Kansas City, Los Angeles, Seattle, Salt Lake City, Minneapolis, Milwaukee, Chicago, Saginaw and Cleveland.

Col. Foote admires our highly organized and specialized production systems, but is astounded to find in so many plants a disregard of quality, volume being the main objective. He states that they would never dare to flirt with failure by sacrificing quality in an effort to gain an advantage in price; the English taste would not stand for it, and he doubts that the American people are any different in that particular.

Col. Foote has made many friends throughout the biscuit and candy industry during his short stay and we hope he will pay us a return visit soon. He sails for England Easter week.

George Close Co. Denied Right to Change Patented Machines

Judge Lowell of the District court, Massachusetts, held that defendant, Geo. Close Co., was guilty of infringement because of changing their wrapping machines to handle larger size caramels.

The plaintiff, Ideal Wrapping Machine Co., sold the defendant caramel wrapping machines to handle a certain size piece, later became financially interested in a candy manufacturing business which put out a larger size caramel than the machines which they originally sold to Geo. Close Co. When the latter ordered the Ideal Wrapping Machine Co. to make alterations in their machines to cut and wrap a larger size caramel the order was refused, whereupon the Close Company made the necessary changes in the Ideal machines which they were using, but this action was considered an infringement.

Arthur F. Miller Visits Europe

Mr. and Mrs. Arthur F. Miller sailed on the *Carmania* March 3 for a two months' visit to England and the continent. Mr. Miller, who is now associated with Baker Perkins Co., will visit the factories of Baker Perkins, Ltd., of London and A. Savy Jeanjean in France. He will return in May shortly before the N. C. A. Exposition, where he will have charge of the Baker Perkins machinery exhibit.

Showing the crude wharf facilities of the early Havemeyer, Townsend refinery. (Courtesy, National Sugar Refining Co.)

The Advent of the N. C. A. Ushers in—

Candy's Renaissance

(V. Forty Centuries of Sugar and Candy)

By Orville H. Kneen

DIFFIDENT as the flapper and sheik of the '70's were reputed to have been, they lacked nothing for the expression of their affections. In fact, it is difficult to read through a candy price list of the period without becoming more or less definitely impressed with the existence of sex even at that remote era.

Truly it may be said that the candies and flavors of the early '70's lacked nothing in variety. One firm offered, in addition to the more common flavors, teaberry, "union" pepper, "love" star, cream, red or yellow jack, and a number of other long-forgotten palate ticklers, and we find among the popular penny goods of that day, many interesting survivals. "Love" drops and "love" rings vied with "secrets" or "love" letters and penny motto "hearts," while chocolate mice and "kisses" doubtless had their party uses. Flirting cards of "Lovers'" Lozenges were also offered, as were also Love Cakes, Lady Fingers, Refined or Ladies' Licorice, Gum Arabic Babies, and a large variety of verses and mottoes.

In the year 1874 Edward A. Heintz started his Confectioners' Journal. He announced that there were over 400 confectioners in Philadelphia, then the center of the industry, and at least thirty large enough to be called wholesalers. The modest advertisers of his Volume 1, Number 1, included two firms who offered, in addition to various confections, an assortment of fireworks.

Possibly the latter were intended to take the minds of the customers off some of the flavors, colors and plain, unvarnished straight adulterants which in those days were far more potent than healthful. Terra alba, barytes, talc and various minerals were not infrequently used, likewise fusel oil, the bane of present-day buyers of "pre-ware stuff." Dr. Youmans reported in 1864: "Candy is commonly adulterated with flour, and frequently with chalk. Various colors are given . . . by adding paints and dies. Some of these are harmless and others poisonous."

He listed many preparations containing lead, mercury and copper compounds as well as arsenic among the agents used for these purposes; sand and plaster of paris were also "worked in." "Digestive drops," health drops, candies for the chest, colds, debility, and so on were commonly offered, contemporaneous with other alleged "remedies" for man and beast. The use of intoxicants for flavoring was, of course, common.

N. C. A. Lifts Candy to Higher Plane

There were a few far-sighted confectioners who perceived the dangers of the situation and set about putting the adolescent industry to rights. In 1876 was held the first candy convention. It failed to put a stop to bad practices and did little more than create quality consciousness among the more progressive element in the industry. Its successor in 1884 similarly failed. But in the same year the National Confectioners' Association was organized "to advance the standard of confectionery in all practical ways, and absolutely to prevent hurtful adulteration." An active campaign was waged for pure food laws, to apply to all foods, culminating in the enactment of the pure food laws of 1887 and 1906. Undoubt-

Waterfront view of the Havemeyer & Elder Refinery, erected about 1858.
(Courtesy, National Sugar Refining Co.)

edly this cooperative work, among the earliest in any industry, saved the business and lifted it "up onto the higher plane of quality and purity," to quote Walter C. Hughes, Secretary of the N. C. A., "and made possible the phenomenal development in the industry which we have witnessed in the last twenty-five years."

One of the quaint editorials of the first Confectioners' Journal offers the earliest advice to candy makers to specialize: "Each man confines himself to one or at the most two branches, as the whole business could not be learned perfectly in a lifetime. There is the common or stick candy, the gum, the cream, the starch, the chocolate work, and the ornamental branch, with something new continually coming up in each. . . . Germans prevail; Americans and Frenchmen are numerous; there are a few Irish, and scarcely an Englishman." Tony of the cream room might resent his lack of representation were it not for the fact that he has since made up for lost time.

It is interesting to note that modern candy making, although in many cases being carried on by the second generation only, in 1925 was estimated to have produced a billion dollars' worth of candy. Compare this to the less than half a million dollars' worth in 1810, an amount which spread thin at **six cents' worth of candy per person per year.** As late as 1850 the average value of the per capita consumption of candy was only 13 cents per year, compared to over $8.00 in 1925—and still the strain on the family purse is not so great as to indicate saturation!

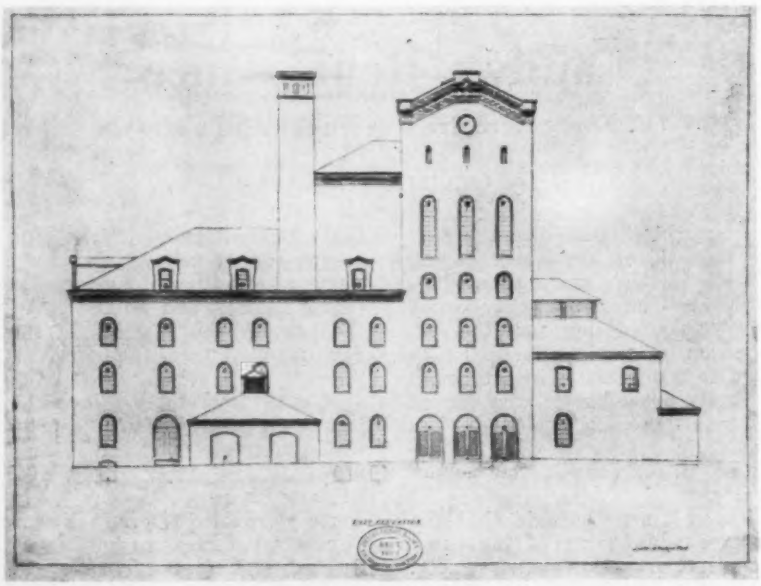
King Corn's Contribution to American Candy Supremacy

Much of the astonishing growth of the industry may be traced to the scarcely-noticed invention of a Russian chemist in 1811. Treating potato starch with acids, Kirschoff found that he could make a kind of sugar. (At that time it was not known that Japan had been making "barley sugar" from barley starch for many centuries.) It was subsequently discovered that a similar product could be made from the starch of corn. From our large surplus of corn alert manufacturers began to extract corn syrup cheaply, and glucose of primary raw material for the manufacture of candy. In America corn is king and it is largely to the development and refinement of this product that this country owes its supremacy in the market for low-priced candy.

Thus at last the candy man came into his own. He reduced his costs, making his delicacies more quickly, less rich and sweet, better "keepers" and of even greater wholesomeness for the consumer. He began to use corn syrup to "cut the grain," in place of cream of tartar and other agents, and found this pure and easily digested sugar ideal to combine with cane sugar in the manufacture of quality confections.

Fortunately for the candy maker, the earlier superstitions which retarded the development of "the sweetheart of corn" have almost entirely disappeared. With the inspection of every color and flavor by government agents, the candy maker of today offers a food which is not excelled in purity by any other food. Confections are thus quite suitable for display as health and energy sweets, and today our "apothecaries" retail candies as they did hundreds of years ago, though at lower prices and with less mystery surrounding their origin and manufacture.

(To be continued.)



Matthiessen & Wiechers Sugar Refinery, Jersey City, 1862. Reproduced from the original drawings in possession of J. Henry Lienau.
(Courtesy, National Sugar Refining Co.)

Ask Me!

1. *Name three sources of animal gelatine in common use for edible gelatine manufacture.*
2. *What is the quickest and most satisfactory method of applying cocoanut, chopped nuts, chocolate "Shot," etc., to the surface of undipped marshmallows?*
3. *Which ingredient of the marshmallow batch has undergone the most revolutionary development in grading and standardization during the past two years?*
4. *What material recently made available in commercial quantities and at low price offers the confectioner greater flexibility in texture and keeping quality than any basic raw material heretofore available?*
5. *Why do green Syrian Pistachios cost more to produce than yellow Pistachios?*
6. *What is meant by "Overrun" as applied to marshmallow?*
7. *Is it sufficient that starch used for marshmallow work be clean and at proper temperature for casting?*
8. *How did the present Queen of Confections come to be called "Marshmallow"?*
9. *What condition is most essential to the storage of gelatine?*
10. *Why are the "fines" of commercial "prime albumen" not as desirable as "flake"?*

Answers to February Questions

1. *What produces the gloss on chocolates?*

Ans. Cocoa butter.

2. *What is meant by "slate" as applied to cocoa beans?*

Ans. Unripe beans.

3. *What chocolate product is known abroad as "hail"?*

Ans. Chocolate "shot," or "sprinkles."

4. *What material used in chocolate work is derived from the bark of a tree?*

Ans. Confectioner's shellac.

5. *How are pistachios used in the meat-packing industry?*

Ans. To add color and flavor to sausages. (See "Pistachios and Nougat" appearing in this issue.)

6. *According to Spanish literature, where did the finest-flavored cocoa beans come from?*

Ans. Maripipi, Philippine Islands.

7. *Over how long a period may chocolate coated goods be safely stored?*

Ans. Chocolate coated goods have been stored safely and without deterioration for periods of six months to one year, depending upon the character of centers used and the conditions of storage. (See "Utilizing the Cold Storage Warehouse to Stagger Production" appearing in this issue.

8. *What is the common name for Methyl Protocatechuic Aldehyde?*

Ans. Ordinary vanillin.

9. *How would you differentiate between the melting point and softening point of a hard butter or a coating?*

Ans. Softening point is the point at which a portion of the fat begins to melt, causing the solid structure to collapse and feel soft to the touch. Melting point is the point at which the higher melting stearines begin to melt or dissolve in their already melted neighbors. (See Part II, "Heat Struck," appearing in this issue.)

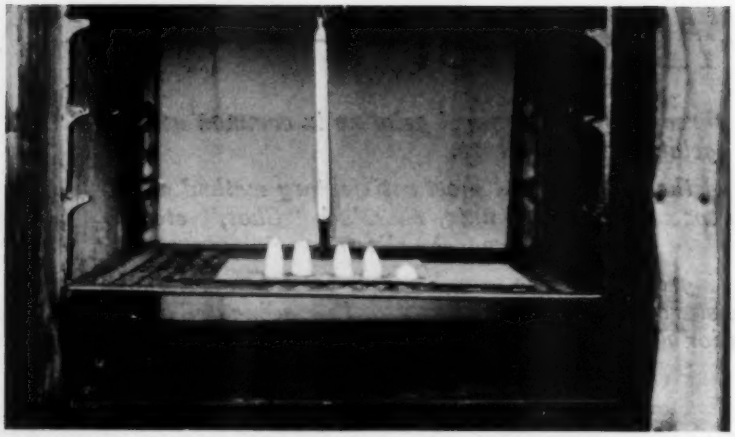
10. *Name eight different materials commonly used in tying or ribboning boxes.*

Ans. (1) Gold cords; (2) Tinsel ribbons; (3) Combination tinsel and artificial silk ribbons; (4) Fibre ribbonzene; (5) Silk ribbonzene; (6) Satin ribbon with artificial filling; (7) Satin ribbon, all pure silk; (8) Silk cords, with tassels.

Part Two

HEAT

By Robert Randolph



Pellets of different fats are being subjected to the softening point test under rigid conditions of temperature control.

WERE all coating users to adopt a common and intelligent specification on softening point and free fatty acid content in the cocoa butters, coatings and liquors which they buy, it would be a great constructive step toward the solution of graying. It is a well established fact that unripe, partially fermented cocoa beans will not produce a butter with as high melting and softening points as butter which has been pressed from mature, properly fermented fruit. Instead of a dry, hard butter with a brittle fracture, these slatey and partially fermented beans tend to produce a butter of greasy appearance, pasty consistency and low softening point, depending upon the extent of their presence in the pressing. Neither the liquor itself nor the butter pressed from such liquor has any place in high grade chocolate work.

Yet, one has only to note the prevalence of slatey and improperly fermented lots of cocoa on the bean market to realize the constant danger which lurks in butters and coatings which are produced from unsound lots of cocoa. Butters of this description might very readily conform to the conventional trade specification "pure prime cocoa butter" and still be out of the question for quality coatings. Another point to be watched in buying cocoa butter for chocolate manufacture is what is known as the "free fatty acid content." Wet cocoa provides a wonderful place for these acids to "grow" and the result is passed along to the butter buyer, not only in impoverished flavor and rancidity but in the materially lowered softening point of the butter.

Direct Relation Between Softening Point and Graying

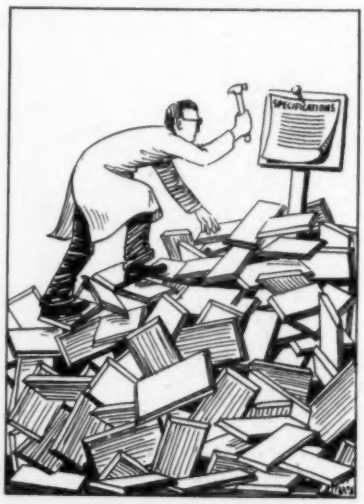
The relation between the softening point of a butter and the tendency of the finished chocolate to gray, is a very direct one. The lower it is, the lower the store thermometer needs to read for a portion of the fat to liquefy and produce capillarity. Part of this fat may melt even *before* the whole mass softens and begins to collapse, but there is no simple test to indicate at which point this occurs. At all events, it is the softening point (rather than the much maligned melting point) which flies the first danger signal to warn us of approaching grayness. Melting points and softening points do not follow one another up and down the temperature scale uniformly a few degrees apart as is commonly supposed. The melting point may be very high and the product still be "soft." As an illustration of this, the melting point of summer "Crisco" is 94°, yet there is probably no reader who is not familiar with its low softening point and plastic consistency.

To understand this lack of a uniform relationship between the melting and softening points, we must regard a natural fat such as cocoa butter as being in reality a mixture of high melt and low melt fats. As the temperature is raised, the low melt fats are the first to melt and the butter is said to "soften." The entire mass does not liquefy, however, until we reach a temperature at which the higher melting stearines will also begin to melt, or dissolve in their already melted neighbors. Thus the specification of a high melting point alone *may or may not be* an adequate safeguard against graying at ordinary temperatures, depending upon the relative proportions of higher and lower melting fats which the butter contains.

Chocolate Thickening Explained

The proper "setting" or solidifying of the cocoa butter is a highly important detail in its manufacture for unless it is set from a liquid state, or agitated while in a grained state so that both fractions form one homogeneous mass, separation will occur at the temperature at which the higher fraction begins to set. On the other hand, if set properly, the resulting butter will refuse to collapse almost to the point at which the whole mass becomes liquid.

Similarly, the graining out of



The chemist is beginning to tack the butter presser down to a specification.

...T-STRUCK!

The Tragedy of Chocolate

In 3 Acts

The custom of trading in wet cocoas is the starting point of many of our subsequent troubles with cocoa butter.

the higher melting stearines on slow cooling is what causes chocolate to thicken. Such chocolate never holds up well. The common procedure of adding more butter to the melt to thin it down does not improve matters, for only by keeping the temperature of the melt above the melting point of the butter, can we retain an ungrained, homogeneous mass.

Were we to fractionate cocoa butter, fully two-thirds to three-quarters of the resulting products would consist of low melt fats.

A softening point test is the best indication as to whether this setting has been done properly, and for both coatings and butters, it is even more valuable than a melting point.

Pressed cocoa butters of usual market quality average around 90 to 92 m. p. Pharmaceutical houses frequently specify 94° butter and pay a premium to get it. Expeller butters made from unroasted beans appear to run more or less consistently around 94° to 95°, although in some instances they have exhibited other characteristics such as a high free fatty acid content which make them even less suitable for chocolate work. The higher m. p. of butter made from raw cocoa would seem to indicate that the heat of the roasting process is responsible for breaking down some of the butter.

If it is possible to obtain, through the simple expedient of a more exacting specification, a 94° or 95° m. p. together with a brittleness of fracture which indicates a correspondingly high softening point, we will gradually force pressers to exercise greater care in the selection of their raw material. In this manner we can help the cause of grayless chocolate by at least postponing grayness to temperatures beyond the range of normal weather conditions.

Possibilities of "Cracking"

The fact that ordinary cocoa butter is in reality a mixture of high and low melt fats has given rise in some quarters to the speculation as to what might be accomplished by fractionating the product to separate these constituents into a series of butters with melting points ranging from say, 84° to 98°. Such a fractionation is known as a "cracking" process.

It is this process which enabled the cocoanut oil refiners to open up a new field in the familiar "hard butters." From a "whole" cocoanut oil with a melting point averaging around 76° they obtain from 25 to 33% of hard fats with melting points up to 92° and 94°; the remaining fraction consists of what is known as "light edible oil" (melting point around 70° to 72°) which is used extensively by nut salters, etc.

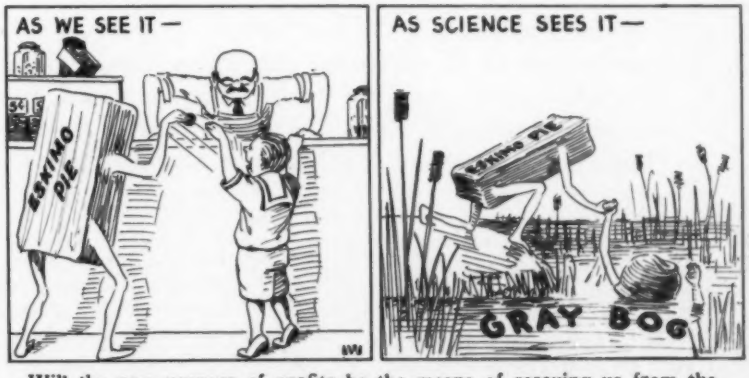
Might not a similar process of cracking be applied to cocoa butter? That the higher melting fraction will materially retard graying of chocolate, there can be no doubt. Why, then, are cocoa butters with higher melting and softening points not made available to the confectioner?

The truth of the matter is that neither the butter pressers nor the oil refiners have yet found a satisfactory market for the great quantities of *soft* butters which they would be obliged to take along with these higher melting stearines. It is estimated that this lower fraction would comprise fully sixty per cent of the total bulk of the original butter.

This fat would melt somewhere around 84 degrees, and possess a plastic consistency similar to milk fat.

For ordinary chocolate work (with the possible exception of

(*Continued on page* 54)



Will the new usurper of profits be the means of rescuing us from the grayness problem.

The Annual
CHOCOLATE ROUNDTABLE

OF THE MANUFACTURING CONFECTIONER

" . . . . I am sure results of the discussion pertaining to chocolate will be of the greatest value to members of our industry. This is really constructive work and well worth while."

Walter H. Hughes
Secretary
National Confectioners' Association

Answers to Question 1

THE QUESTION:

1. What would you consider a fair price for
(a) Basic cocoa beans?
(b) For cheap coatings?

THE ANSWERS:

Penn. 2ab: (a) 10-12c lb.; (b) 14-16c lb.

N. Y. 16a: We do not feel it advisable to answer this question. In fact, we feel that it is a very dangerous type of question and hope that you will give a good deal of thought to the answers before you publish them.

Md. 5b: (b) 15c lb.; (liquor 18c).

Penn. 6a: (a) 12c; (b) 16c lb.

Ill. 9b: This question is one which should be gone into in a very large way. "Coatings" and "Chocolate Coatings" are two vastly different propositions.

N. Y. 10ab: (a) 10c lb.; (b) —.

Minn. 11b: (a) —; (b) 12c lb.

Ill. 13ab: (a) 12c lib.; (b) 15c lb.

Penn. 15a: (a) 12c lb.; (b) 16-18c lb.

EDITOR'S NOTE—Together with numerous informal responses from other quarters, one gathers that it is the general consensus of opinion among chocolate manufacturers and coating users alike that the price of basic cocoa ought to be somewhere around 12c in order to permit cheap coatings to be sold for 15c. It is significant that nowhere is there any suggestion that beans go to the disastrously low levels which followed the war period. The industry seems quite willing to "live and let live" and have mentally accepted a basis which would appear to be fair to all concerned.

Answers to Question 2

2. Do you approve of the price guarantee clause which is either expressed or implied in virtually all coating contracts?
(Give your reasons for whichever stand you take.)

THE ANSWERS:

Penn. 15b: No; it is not ethical.

Penn. 2ab: From a candy manufacturer's standpoint, yes. The manufacturer has the advantage.

N. Y. 16a: From a business point of view we do not approve of the price guarantee clause but there are many other considerations which make this a debatable question. For instance, unless the coating manufacturers took a large percentage of the risk many confectioners would go into the manufacture of their own coatings.

Tex. 3b: No. It places the confectioner at the mercy of the coating manufacturer. At this time of the year it does not give the small manufacturer any protection.

Md. 5b: Yes. Price guarantee on coating enables a candy manufacturer to book future orders, knowing costs definitely for the period specified in the contract. This is especially true in the fall of the year.

Cal. 1a: No.

Penn. 6a: We do not approve of a price guarantee either expressed or implied, because such a guarantee is economically unsound. It creates a purchasing power for coatings which is meaningless and thereby frequently creates a fictitious and high cocoa bean market.

Minn. 11b: Yes. In order that we may protect ourselves and so cover our own trade.

Ill. 13ab: For most coating manufacturers a guaranteed price is a disadvantage, however, for most buyers it is an advantage.

Ill. 9b: I see no objection to a guarantee clause in a chocolate coating contract. It is optional with the purchaser to sign or not to sign any kind of a coating contract. A good buyer will make as good a contract as he possibly can. If he is really a good buyer he will consider quality as well as price. There is no obligation on the part of the seller to sell his merchandise at a price, or to make a contract that he cannot afford to make. There was a time when the writer had faith enough in other business houses to enter into agreements on certain things, but experience will prove to anyone that these agreements are always violated by at least a fair percentage of the people entering into them. It is a great deal as the Kaiser said, "Agreements are

only scraps of paper," and this appears to be true with a great many business houses.

N. Y. 10*ab:* No. Buyer only is protected, and chocolate manufacturers covering necessary raw material to manufacture for contracts are left unprotected against decline, and often therefore have to fill contracts at a loss.

EDITOR'S NOTE—Here we have a most interesting cross section of opinion from all sections of both the coating and candy industries, and from all parts of the country. Persons analyzing these replies will be struck with the wide divergence in point of view as well as the evident sincerity of those whose interests are on the same side of the fence. Consequently, we find coating manufacturers who favor and coating buyers who oppose the giving of this apparently one-sided guarantee. There is a lot of homely common sense in the disillusioned philosophy of Illinois 9b, a coating buyer, and in the frank reasoning of New York 16a, a manufacturer of fine quality coatings.

Do you agree with them? We will be glad to hear your views, too.

Answers to Question 4

4. Should the duty on imported chocolate and chocolate covered goods be increased? Why?

THE ANSWERS:

N. Y. 10*ab:* Yes. The difference in cost of labor in this country and Europe is so great, and because freight rates from chief source of cocoa beans (West Africa) to Europe are less than to the United States, the European manufacturer is now in many cases under-selling local manufacturers. Statistics of the Department of Commerce indicate that the importation of chocolates and chocolate candies is increasing at a rate of more than 25 per cent per annum.

Cal. 1*a:* No. Improved methods of manufacture should overcome duty charges and cheap labor in Europe.

Penn. 15*a:* Yes. Because cheap beans condemned by our Department of Agriculture may be made into chocolate abroad, reshipped to America and sold under our costs.

Ill. 9*b:* The writer is not in favor of high tariffs, but does believe that a reasonable amount of duty should be fixed on imported goods. American manufacturers today are so well equipped, both in machinery and working capital, that they certainly do not need the protection they did some years ago.

Penn. 2*ab:* Yes. I am a good republican and believe in protection.

N. Y. 16*a:* The duty on imported chocolate should be increased. At the present time we have a very small margin of protection, and which we believe is smaller than the protection given manufacturers in other large chocolate producing countries. The present duty does not begin to make up for lower wages paid in some producing countries. While the present import of chocolates is not serious, the low tariff leaves American chocolate manufacturers open to the constant danger of having this market flooded with foreign competition.

Md. 5*b:* I am for protection of home industry.

Tex. 3*b:* Yes. In order to protect manufacturers in this country.

Ill. 13*ab:* We are not in favor of having the present duty on chocolate and chocolate-covered goods increased. We would prefer to have the foreign manufacturers manufacture in their own country and pay duty rather than come here and open factories when we already have an overproduction.

Penn. 6*a:* We favor an increased duty on imported chocolate and chocolate products. European regulations pertaining to the quality of cocoa beans are not as strict as regulations in the United States, which frequently allows Europe to buy cocoa beans at lower prices, make chocolate out of this product and then ship it to the United States.

EDITOR'S NOTE—What is the answer here? Will California's suggestion, that improved methods of manufacture in America be used to combat Europe's cheap labor, be the answer to the rising tide of importations depicted by New York 10ab? Will a high duty exclude foreign competition, as the three Pennsylvanians hope, or will the higher tariff barrier simply goad European capital into opening factories in the United States and thus aggravate the present overproduction as Illinois 13ab insists? There are apparently a number of valid arguments on both sides. What do you think?

(The Annual Chocolate Roundtable will be continued in next month's issue with the presentation of answers to Questions 3, 5, 6 and 7.)

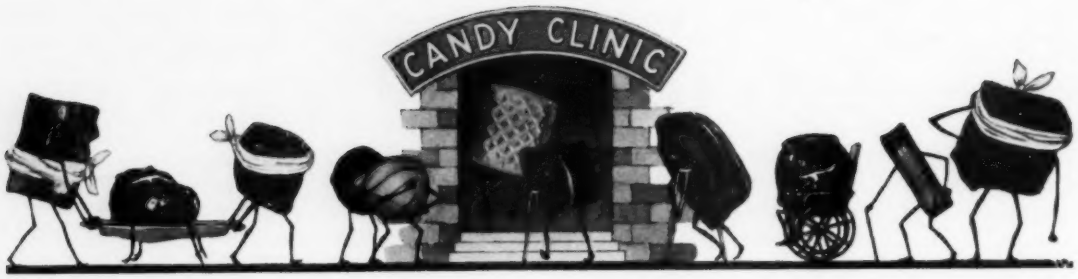
Answers to following Questions next issue:

3. *Should Federal standards for "breakfast cocoa" be amended to admit cocoa butters containing less than 22% butter fats? Why?*

5. *In line with the N. C. A.'s announced intention to provide suitable recognition to the individual or organization whose constructive accomplishments during the past year constituted the greatest single benefit to the confectionery industry, what person or persons in the chocolate industry would you consider worthy of this recognition and why?*

6. *Should the Federal standards for chocolate be amended to permit the use of a wholesome vegetable fat other than cocoa butter? On what grounds do you justify your position on this point?*

7. *What are your suggestions with regard to research on problems peculiar to the chocolate industry, such as graying, aging, etc.? Should this work be accomplished through individual or cooperative effort? If the latter, how should the necessary funds be raised?*



The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies. This month it is uncoated marshmallows; next month it will be cream work of the "Hand Roll" type. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

Uncoated Marshmallows

The following samples of uncoated Marshmallows examined by the Clinic were purchased in high class retail shops in and about New York City. All were priced in the neighborhood of 60c per pound.

SAMPLE C-5

Condition when presented to consumer: Fair.
Packing: Excellent.
Box: Round ½ lb. tin.
Color of M. M.: Good white.
Flavor: Faint vanilla; poor.
Texture: Tough; crust very thick.
Count per lb: 56.

SAMPLE H-5

Condition when presented to consumer: Bad, practically all stuck together.
Packing: Fair; no wax layer on top.
Box: Cardboard; pail shape.
Color of M. M.: Dirty white.
Flavors: Characterless.
Texture: Very tough.
Count per lb.: 68.

SAMPLE B-5

Condition when presented to consumer: Very good.
Packing: Excellent; plenty of powder used.
Box: Cardboard; pail shape.
Color of M. M.: Fair.
Flavor: Good strong vanilla.
Texture: Good, very light.
Count per lb.: 75.

SAMPLE S-5

Condition when presented to consumer: Top layer dry; balance fair.
Packing: Fair; very little powder.
Box: Cardboard; pail shape.
Color: Good white.
Flavor: Strong Coumarin character.
Texture: Top layer very tough.
Count per lb.: 70.

NOTICE the range in "Overrun," or count-per-pound, from 56 to 75 pieces to the pound. It is admittedly difficult to control the texture of marshmallow in view of the wide range of conditions which the goods will encounter after they leave the factory.

Not only the time of beating, but the kind of beater used, will have a great deal to do with how the finished product will stand up. It is not advisable to beat your marshmallow *too* long, for even though you may get a few more pieces to the pound, they will become tough after you take them out of the starch. Decide what you want your marshmallow to weigh and then provide your men with suitable equipment and utensils for determining it accurately instead of guessing at it.

If you respect your reputation for turning out a uniform, high quality marshmallow, test each lot of gelatine before you use it. Even the small manufacturer who buys only a barrel at a time should send out a sample for analysis two or three times a year. The gelatine people are employing the best talent they can lay their hands on to help standardize this difficult material. But all of their efforts to date still leave much to be desired in the way of constant and unfailing, batch-to-batch

uniformity. It takes a comparatively slight variation in the characteristics of the gelatine to turn things topsy-turvy in the marshmallow batch.

Be careful in the amount of water you use. In some parts of the country you will have to have it treated to get any sort of proper results with marshmallow.

The care of starch is a subject which has been harped upon incessantly since Hector was a pup. Keep it hot. Let it cool down to blood temperature just before casting. Run it through a sieve at least once a week; when it begins to take on that "dirty look," invest in a new consignment. It will *pay you in the end.*

A Word from the Senior Diagnostician

How have you solved the problems of turnover and keeping quality? Does the consumer who hands over 60c take your marshmallows "for better or for worse?"

WITH but one exception, the condition of these samples when I purchased them was pretty poor. Were I the casual retail customer which I pretended to be, there was only one of them which I could have been induced to purchase a second time. Yet all four of them were nationally-known brands with a wealth of solid reputation behind them.

That the chief fault lay in the slowness of the turnover after they reached the retailers' hands, hardly absolves the manufacturer of a branded article from responsibility to the ultimate consumer. The latter is not interested in the whys and wherefores of keeping quality but expects a fresh package of marshmallows when he pays out his 60 cents for it. It is up to the manufacturer to either speed up the turnover through adequate instruction and supervision or to improve the keeping quality of his product by taking advantage of some of the scientific advances in the methods of manufacture.

In my travels around the retail shops, I observed marshmallows being sold by the pound from 5 pound tins and cardboard packages. It is worthy of note that these marshmallows all appeared to be in excellent condition. The small retail

store which "lays in" a stock of 10c, 15c and 20c packages destined to stand around on the counter for an indefinite period before being sold, does not help the sale of marshmallows. On the other hand, there is a decided tendency on the part of the retailer to push bulk goods and I think the marshmallow manufacturer should take every advantage of it and encourage the substitution of 5 pound tins wherever practicable.

Color is something which deserves to be watched more closely. There is nothing appetizing about a dirty-looking marshmallow. Two of this month's Clinic samples were of a good white color; the other two were not. A common cause of this discoloration is the use of a vanilla extract containing too much burnt sugar. It is also well to look into the color of your gelatine and to make sure that your kettles and beaters are kept scrupulously clean.

About the most important thing about a marshmallow, apart from its characteristic texture, is its flavor. You would never know it from these samples. Sample B-5 made a home-run with me. Samples C-5 and H-5 were flat and tasteless. As for the "New Mown Hay" character of S-5, that may be a matter of opinion, but to me it's a case of the woman who said "Everyone to his own taste"—and then kissed the cow!

EDITOR'S NOTE:—*How would your marshmallow package come through such an examination? You think you know, but would it?*

If you doubt your ability to make an impartial appraisal of your own product, the Candy Clinic will be happy to assist you with a private examination alo ng the lines of those conducted in these columns, and to furnish practical recommendations, analyses and formulas where necessary. A nominal fee will be charged for this service.

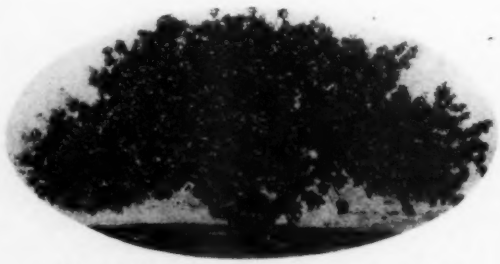
After the clusters are cut down, the nuts are separated from the waste by hand.
(Courtesy Zenobia Co., Inc.)

Pistachios and Nougat

are to America what "pistachios and Arak" are to the Orient

BY JOSEPH A. ZALOOM

WHEN the American candy-maker wishes to impress his customers with the excellence of his product, whether it be chocolates, nougat or caramel, he "garnishes with pistachios." Yet it is probable that he does this without giving hardly a thought to the tremendous amount of human interest which attaches to this, the world's most romantic luxury.



A patriarch of the pistachio gardens of Syria

Historically, the pistachio is a very ancient nut, for Bible commentators claim that it is the one which Joseph's brothers took with them from Canaan into Egypt. This day, there stand pistachio trees in Syria and in Turkey that have furnished this delicious fruit steadily for over one thousand years. Pistachio trees are credited with indefinite life and have only two deadly enemies. One is an insect about the size of an ordinary fly. Very fortunately, the attack is effective only in the lower part of the trunk of the tree. The exposure attracts worms that dig into the trunk and eat their way into the vital sections and in forty-eight hours, the tree is lifeless. The second and commonly known enemy is the axe. Hundreds of thousands of pistachio nut trees in Turkey were destroyed during the world war to supply fuel for railroads. Like the olive tree, the pistachio trees furnish a very heavy and long burning wood.

In the Orient They "Say It with Pistachios"

Pistachio nuts continue to be the most popular and the most appreciated of nuts in the countries bordering on the Mediterranean. Pistachios and "arak" (a strong Oriental liquor) form the indispensable "mazza" (appetizer) at the Syrian wedding feast. After the wedding ceremonies, each guest is given a "towdiha" (good wishes) in the form of a bag of pis-

tachio nuts. The same customs prevail in Persia and generally in the Orient.

Pistachio nuts are grown principally in Turkey, Italy, Persia and Syria. The fruit is about the size of an olive. The nuts have a double shell, the outer usually red, the inner one smooth but hard and similar to ivory. The kernel is pale green, sweet and of pleasant taste.

Persian Pistachios Are Extra Large

Pistachio nuts grown in the southern regions of Persia and in Mesopotamia are noted for their extraordinary large size. These pistachios are brought over mountains from the interior by camel caravans and the trip to the seaport takes twenty to thirty days. The pistachios grown in Syria are almost identical in size with those grown in Italy but the darker color of the Sicilian variety has made it a favorite among confectioners for many years. Latterly, however, the high cost of the Sicilian grade has stimulated the cultivation of a Syrian variety which is equally green and which may be had at a substantial saving in price. To the thrifty orchardist this achievement of green color has involved a compromise with the volume of his production, since the mature green kernels, if left on the trees, would become yellower in color but larger in size.

Sausages Compete with Candy for the Supply of Green Pistachios

It will come as a distinct shock to the candy manufacturer, who has always considered pistachios as his special province, to know that fully 75% of all the green pistachio kernels imported into this country are used by the sausage manufacturers! Pistachios are mixed in the chopped meat and the finished product is formed into loaves or fancy sausages. With pimentos and spices, pistachios add delightfully to the flavor and appearance of the product.

Pistachio kernels add a pleasant flavor and form a pretty topping on chocolates. They are very popular used in nougats, caramels, turkish pastes and other candies. Pistachios are now being used for pan work the same as Jordan almonds, while the roasted and salted pistachio meats find their place in the high class nut shops.

The most important and most popular pistachio product is the pistachio roasted and salted in the shell. An excellent grade may be had in all high-class nut shops and confectionery stores throughout the country. This grade is imported in the raw state and roasted and salted in sanitary machinery, untouched by hands. A very thin white coating of salt is applied to the shell, creating a very attractive product. This process not only preserves the nut from Summer dangers but adds greatly to the flavor.

Kerosene Tins Hindered Development of the Product

The consumption of pistachio nuts in the United States is estimated at 3,000,000 pounds each year. Until a few years ago, pistachio nuts were imported already roasted and salted and packed in used kerosene tins. The foreign roasted product was very poorly prepared. The shell was exposed and made unattractive by the

The pistachio nuts are spread out to dry in the sun after the outer skin has been removed. A common sight on the roof tops of Aleppo.

(Courtesy Zenobia Co., Inc.)

Cracking the Shells: All nuts whether already open or closed pass through the pincers so that no closed nuts are left. This work is now done largely by Armenian refugee women.

(Courtesy Zenobia Co., Inc.)

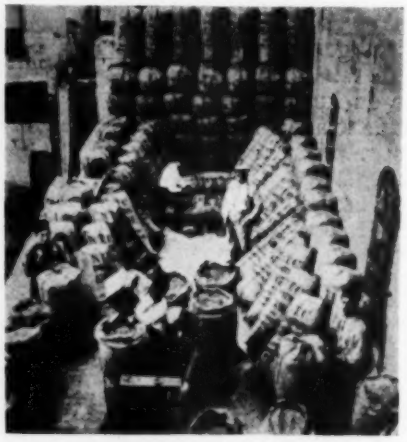
improper methods of applying the salt. The present modern method of coating with a thin white layer of salt, preserves the crispness and flavor.

The consumption in Europe is comparatively small. It is estimated that the consumption in America exceeds that of all other countries put together even those where pistachios are produced and where their toothsome flavor is by no means unappreciated.

What Every Bootlegger Should Know

In proportion to population, Egypt ranks second as a consumer of pistachio nuts. Egypt, being an Arabic speaking country, retains that desire for the "Mazza." In all cafes, men and women may be seen enjoying pistachio nuts and Arak.

The most important pistachio-producing country is Turkey. The nuts are transported by camel caravans from the Turkish interior to Aintab. Until eight years ago, the principal Turkish orchards were owned by Armenians.. All Armenians were then exiled and their lands confiscated. Only Turkish merchants now collect the nuts from the growers and forward them to Aleppo, the principal city in Syria where the Christian merchants purchase and prepare the nuts for shipment to America.



Bagging Pistachios at Aleppo

Listening to the Nuts in the Light of the Moon

The nuts are harvested in August and September. The nuts grow in clusters on trees that stand 12 to 18 feet in height. During the period of ripening, amorous natives spend their evenings under the pistachio trees. As the kernels reach full size, the hard shell is forced open causing an amusing sound. This natural opening of the shells happens only in the moonlight, and the natives never fail to enjoy a feast listening to the sound of the opening nuts "fee dow il amar" (in the light of the moon).

The clusters are cut down and the nuts are then separated from the waste by hand. A large wooden wheel is then rolled over them to break the outer shell. This shell is then removed by hand and the nuts are spread out to dry in the sun. The pistachios are then sifted by skilled workmen to separate the empty shells from the full ones. The empty shells are separated from the others by placing a quantity of nuts in a sieve and shaking it slowly in such a way that the light or empty nuts gather in front whereupon they are removed and thrown away.

Work for the Armenian Refugees

About 25% of the nuts crack open on the trees. The remaining 75% is done in Aleppo by Armenian refugee women who sit on the stone floors in long rows cracking nut shells. All nuts whether open or closed, pass through the pincers or pliers. In this process, no closed nuts are left. Several hundred women are employed in this work. They earn about 15 cents per day. Some of the more rapid workers earn as much as 20 to 25 cents per day.

Upon arrival of the cracked nuts in the United States, they are carefully graded and any remaining shells are removed in modern machinery. The nuts are placed in large roasters, sprayed with a salt brine, and finally roasted. The finished product is packed in new sanitary tins containing 25 lbs., 10 lbs., or 5 lbs., and even 5 cent packages are available for those who want them.

Pistachios Keep Well Over Long Periods

As regards the keeping qualities of pistachios, it is estimated that raw shelled nuts and the roasted and salted in the shell will keep about one year. Raw nuts with the outer red husk keep seven years. Pistachios, when properly roasted and salted are practically immune from summer dangers. The principal importers here guarantee to replace with new goods, any of their pistachios that may lose their crispness from exposure to dampness, etc.

It is interesting to know the comparative ease with which pistachios may be opened by the consumer. Although the shell is hard, it is already cracked. By placing a half shell of a nut in the opening, the shells are easily pryed open.

A good crop of pistachio nuts is never obtainable two years in succession. A good crop is always followed by a poor crop. In the event of unpropitious weather condi-

(*Continued on page 57*)

Monthly Digest of Current Technical Literature

of direct or indirect relationship to the confectionery industry

Value of the Fiehe test in differentiating true from artificial honey. Emmy Raith and Fritz Wischo. Pharm. Monatsh. 8, 197-9 (1927). The Fiehe test consists in evaporating an ether extract of the sample to dryness and treating with resorcinol-hydrochloric acid solution. A cherry red color indicates added invert sugar. This article describes an experimental study of the test and shows that a negative result only points to a pure product, while a positive result may indicate an artificial honey, or a pure honey which has been overheated or otherwise abused.

Determination of fat in cacao products. E. M. Bailey. Jour. Assoc. Off. Agr. Chem. 10, 501-2 (1927). Describing further collaborative work which showed good agreement between the Lepper-Waterman, Roese-Gottlieb, and official methods. The modified official method consists in continuous extraction with low-boiling petrolic ether without preliminary drying.

Heinrich Rossler's new automatic apparatus for the determination of water. Chem.-Ztg. 51, 688-9 (1927). The water is determined by distilling the sample with benzene or xylene, and measuring the water distillate volumetrically.

Sugar Refining in Porto Rico. E. K. Junghans. Facts about sugar, 22, 892-3 (1927). A description of the production of refined sugar by the Suchar process at the Porto Rican & American Refinery. Of great interest to candy manufacturers, because of the prospect of new competition in sugar. The sugar produced is of good white color, and promises excellent results in candy.

A new method for the determination of Benzoic Acid in foods. G. W. Monier-Williams. Analyst 52, 572-5 (1927). Offers no advantage over the present American official method.

Analysis of sweetened condensed milk. F. Richard. Lait., 7, 635-9 (1927). Gives a complete scheme of analysis for all constituents of sweet condensed milk. Recommends the Gerber method for fat.

Practical method for the determination of fat in milk. A. Maghano and J. Porzio. Lait., 8, 714-28 (1927). A description of a valuable method for use where no centrifuge is available. The method employs Gerber tubes and an alkaline Fehling's solution as reagent. This method should be useful in plants where little laboratory equipment is at hand. The only apparatus required is a water bath, the Gerber tubes and some pipets.

Fruit pectin in confections. W. A. Rooker. Fruit Products Jour. 7, No. 3, 9-11 (1927). A discussion of the proper use of pectin in candy-making. Worthwhile information on this important new raw material.

PATENTS

Apparatus for cooling granular materials such as coffee or cocoa beans after roasting. Uno Co., Ltd., & Benkert. British No. 264,633, Nov. 20, 1925.

Blanching Brazil Nut kernels with superheated steam. Apparatus is described. J. A. Thompson & W. S. Hough. British LW No. 263,518, Sept. 18, 1925. British steam-blanched Brazils have already found a wide market in this country.

Autoclaves for preparing "Crystallized Fruits" by heating with sugar syrup. Soc. P. Navarre et Fils. British No. 264,156, Jan. 8, 1926.

Glazing for candy. C. S. Hudson. U. S. No. 1,646,731, Oct. 25, 1927. A spirit soluble gum such as shellac is dissolved in iso-propyl alcohol.

Process for canning liquid food products. U. S. No. 1,640,127, Nov. 15, 1927. T. M. Rector. Fruit syrups, etc., are preserved from the effects of deleterious gases such as oxygen by replacing the latter in a container with an innocuous gas such as nitrogen or carbon dioxide, and packaging the material with the associated gas in relatively small receptacles. (This is a further adaptation of the "Vitapak" idea which is now employed for cashew nuts, pecans, malt cocoa, etc.)

Candy crystallizing apparatus. P. S. Henderson. U. S. No. 1,650,513, Nov. 22, 1927.

Molding chocolate or chocolate mixtures. L. B. Hunter. A mass of chocolate material is cooled below its melting point and then forced through a die opening under pressure while in a solid, cold condition. U. S. No. 1,649,307, Nov. 15, 1927.

Apparatus for extracting fats. H. V. Atwell. U. S. No. 1,648,670, Nov. 8, 1927. Cocoa powder is mixed with sufficient water to form a freely flowing material, and the fat is then extracted with benzol or similar solvent.

Bareknuckle Selling and the Candy Advertiser

SALES and advertising executives in a score of industries are wondering why, with all the talk there has been about prosperity in the last year or more, it is so difficult to show decent profits on growing sales. Where the grumbling used to center around hand-to-mouth buying it now concerns itself with profitless prosperity and impending "battles of the giants."

Generally speaking, few manufacturers appear to be having a discouragingly hard time selling merchandise. Still when operating and selling expenses are totaled, there seems to be a painfully thin margin left for the auditors to catalog as net earnings.

Consequently there is much whispering over the general tightening up that is to come during the present year. Business is in for a series of decisive battles for markets. The Titans are already on the march. Not only in the automobile industry has the artillery started. Two of the outstanding oil companies are at each other's throats. Rumors fly back and forth of a bigger and better feud in the chain grocery field. Among the cigaret advertisers the situation resembles nothing so much as a Battle Royal with all the contestants on their feet.

How does it all promise to affect the candy advertiser?

Candy is one industry where there would seem to be little room for more intensive or demoralizing competition than there has already been during the last three or four years. If it moves at all, the pendulum is swinging in the other direction—away from jazz merchandising tactics, away from silly and wasteful advertising and away from the belief that the childish recrimination of competitors will help dominate markets. There is something quite hopeful in that swing, if it really exists as the Adviewer believes it does.

Selling let itself grow soft and flabby a few years ago when it became evident that there was to be no noticeable let down in living standards and buying power. Other nations might have their post-war slumps. Here in the United States we had no more than a threat. Dealers and consumers bought. Mighty few of them were sold anything. They possessed the will to buy and the means to make that will effective. Advertising loafed. Selling slipped in general aggressiveness. Then without warning the consumer found he had enough. He could not hope to buy all the products that enterprising manufacturers had put together for him. The instalments on his car, radio, washing machine and even his new suit had most of his pay envelope spoken for. Then selling costs began to climb. They have kept on climbing Profits grew thin, and while the candy industry has not suffered unduly from this profitless prosperity it has been far from immune.

One of the soundest units in the entire industry is located in Pennsylvania. This company while unusually well managed has never chosen to advertise. Its sales for the the first six months of 1927, were around $18,000,000. Profits for the period were roughly $3,400,000, but the ratio of net profit to sales was less than 70% of what it had been in 1922.

The figures below which are worth some serious study show how rising sales have been accompanied by a lowering in the ration of net earnings efficiency:

	Sales and Revenues	Net Operating Profit	Ratio Net Operating Profit to Gross Revenue
1922	$22,724,439	$6,282,930	27.6
1923	27,125,558	7,959,987	29.5
1924	31,000,080	9,004,965	29.5
1925	30,208,994	5,898,823	19.7
1926	32,913,613	6,286,331	19.6
1927*	17,957,339	3,469,038	19.3

*Six months ended June 30, 1927.

WHEN one company fights a competitor for market domination the matter of profits may become in the heat of events a minor factor. Supremacy at any price short of ruin too often is the sole objective With this sort of disrupting influence absent from the candy industry in 1928, attention may well be focused on other goals. For one thing it should fix itself on a reasonable percentage of profits on gross sales. Advertising, if rightly handled as an economic tool, can help here. If more manufacturers would only see the economy of conducting some sort of test before deciding to spend a certain amount for advertising, there would be fewer wasted advertising dollars.

The manner in which a few thousand people react to advertising can almost always be taken as a reliable gauge of how the millions will act.

Experienced and successful advertisers in other industries invariably test their advertising copy, its sales appeals and headlines in a small way before going ahead with it on a big scale. Could not the manufacturing canfectioner profit by their example more than he has in the past? Taking a chapter out of the experience of an important food-product manufacturer, it would save money and tend to insure results if, before a new candy item attempted to make a place for itself, the following course should be followed: 1, Stock the product in a few towns and study what happens without advertising it; 2, If it sells and only if it sells unaided find out which advertising appeal is most productive by carefully checked tests; 3, With this test data, plan the introductory campaign; 4, Make sure the campaign bulks large enough to make more than one impression on the market—in other words follow it up with sales promotion effort—remember the customer must be reminded as well as informed.

Strange as it may seem competition so far as candy goes is rarely among candy manufacturers. There is, of course, rivalry for the consumer's dollar and his dime once he has decided to spend it for candy. But the real competition is between candy and flowers, candy and tobacco, candy and the movies or candy and any one of a score of other commodities all campaigning for the potential candy consumer's money.

Now that the National Confectioners Association co-operative advertising campaign is swinging into its second year, candy should find itself in a stronger position than ever with respect to this competition. It has gathered momentum and will gain more with the appearance of each month's advertisement. The wider use of color will help tremendously. Probably there was never a better time for the individual manufacturer to tie his own advertising up to the co-operative campaign and thereby pre-empt for himself some of the big show's advantages. That campaign is hard at it, selling the idea of all candy in a big, unselfish way and gradually making a more secure place for candy in the daily life of America. The job of selling his particular brand of candy belongs to no one but the individual manufacturer. No one can do it for him.

Riveting Down an Identity

ADVERTISING themes may rise and fall but the nationality of Peter's chocolate will never be a matter of doubt while its makers advertise it as they have in the accompanying reproduction. Current Peter's advertising develops several important points, for example, the remarkable increases in the popularity of milk coatings as shown by Department of Commerce studies. But the Swiss identity is riveted down convincingly and interestingly perennially. In one advertisement the various factories are shown. In another it is a Swiss

landscape. Neither of these means seems as effective as the use of the map, as shown here. Advertisers discovered maps four or five years ago. Since then the map as an illustration has enjoyed a tremendous vogue, the end of which is certainly not in sight. Here Peter's has drawn its map, showing factory locations, in the popular 17th century manner and modernized it with an airplane. A detail? Yes, but far from unimportant in turning out a compelling piece of advertising. Another detail worth notice is the manner in which the cake of chocolate is wedged into the picture lifting the layout out of the rut of precise symmetry and avoiding sameness.

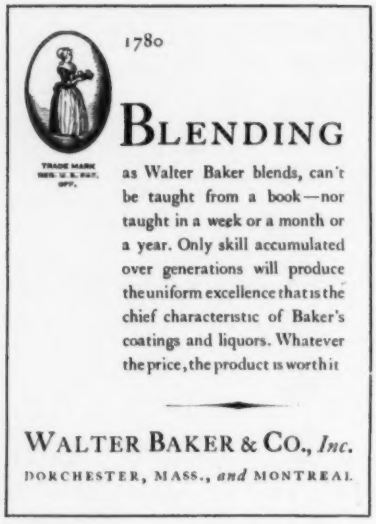
How Crowding Kills Display

FOR almost all practical purposes this advertisement of the Brewster-Ideal Chocolate Company is on a par with most of the others in the trade paper in which it ap-

peared. Certainly it is more inviting than some. Nevertheless it is not as attractive as it might easily have been. Crowding in too much copy without keeping in mind the value of contrast has lowered the advertisement's chances of getting the reader interest it otherwise deserves. The use of the left edge to show the various items in the Ideal line is effective. In the remainder of the page the type could easily have been arranged to offer more contrast between the headlines used and the body of the copy, thus giving the advertisement greater display value and making it easier for the reader to grasp. Items which might better have been subordinated a little, such as Dutchie Milk Chocolate Wafers, occupy too great a proportion of the total space used. As it stands the page is made up of a large number of separate elements which are allowed to ramble without a limit on their cruising radius. To call the advertisement a poor job would be both untrue and unfair. It is a reasonably good one, but a little more thought over the well known method of gaining display would have made it 50 per cent better.

Dignity and Smartness

THE accompanying advertisement by Walter Baker & Company shows rather neatly how a striking effect may be obtained by simple means. Here you have fifty words of copy, a trade mark, the company's signature and some white space, but in the blending of these (to borrow the advertise-


1780
BLENDING
as Walter Baker blends, can't be taught from a book—nor taught in a week or a month or a year. Only skill accumulated over generations will produce the uniform excellence that is the chief characteristic of Baker's coatings and liquors. Whatever the price, the product is worth it
WALTER BAKER & CO., Inc.
DORCHESTER, MASS., and MONTREAL

ment's key word) you have reflected a nice sense of proportion and balance. The thought back of the copy may seem commonplace to many manufacturers. For that reason some of them would no doubt insist on making the advertisement shout at the top of its lungs. Probably no worse error could be made, for it must be apparent even to the man who thinks Bodoni is the name of an actress that the simplicity and moderate tone adopted speak louder and more convincingly than all the heavy black type and trick borders in the print shop. Walter Baker & Company have nearly 150 years back of them. The craftsman who put this advertisement together knew how to make printers' ink interpret the dignity of that century and a half and still retain the look of 20th century smartness.

Pride in Business Paper Space

IT is no secret that some advertisers in trade and business papers belittle the effect of the space they use in these mediums. They will admit tacitly they do not expect dividends from the money spent. When this is the case, they usually use their space in a manner that fully interprets their expectations. Here is a trade paper advertisement that possesses a touch of the fineness generally reserved for consumer mediums where the cost of space demands results of the artist, copy writer and lay-out men. The logical assumption is that Runkel Brothers make products that they can take pride in advertising. Illustration and copy here are good, but the page would gain in effect if the production man had instructed his artist to make the box of candy, which after all is the optical center of the page, stand out in greater contrast to its surroundings. As it stands, the box is almost thrust into the background by the size and blackness of the headline and the striking illustration of the bird. That however, is not a major point. Taking it all in all, Runkel Brothers have made good use of white space here.

Heat-Struck

(*Continued from page* 43)

cheap, winter holiday goods) such a butter is obviously unsuitable. Similarly, the manufacturers of cosmetics and pharmaceutical specialties insist that unless their products contain a high melting butter, they will not stand up. Where in any food industry can we find a use for a plastic cocoa butter, which could not be satisfied to equal or better advantage by less expensive vegetable fats?

In the light of recent developments, it would seem to be only a matter of time until such a market can be found. Without going too deeply into the subject we have one thought to offer.

One answer to the problem may be Eskimo pies. The candymaker has long regarded the Eskimo pie as a sort of "infringement" upon more legitimate confections. Would it not be strange if this same confection should ultimately prove his deliverer from the greater evil of chocolate graying? Certainly, a soft cocoa fat might be eminently desirable for coatings to be used on frozen products.

Chocolate chilled by sudden contact with frozen cream is extremely difficult to handle unless thinned down with a high percentage of cocoa butter. A pie coating made with a soft cocoa butter would remain plastic at lower temperatures and require less thinking. Also, the use of such butter would tend to make the frozen coating digest more quickly in the body and thus obviate much of the criticism which medical authorities have been want to direct at this point.

Would not this and similar products soon take up the surplus of soft butters?

Pistachios and Nougat

(*Continued from page* 50)

tions continuing for a series of years, the crop will inevitably suffer and production practically negligible until improved weather conditions make for a good crop. The 1925 crop was an abundant one. 1926 gave a fair crop and at this writing it is reported that the 1927 crop was hurt by a cold snap and may yield less than 1926. The Turks, however, are planting new groves in large numbers to satisfy the ever-growing demand of the American lovers of pistachio nuts.

Come to the Fifth Annual Exposition

The Stevens—Chicago
Home of the N. C. A. Exposition June 4-8

of the

National Confectioners Association
of the United States

at CHICAGO---JUNE 4-8, 1928

This Years' Exposition Promises to be the Largest and Most Attractive Show in the History of the Candy Industry. 80% of the Space Was Taken Within Two Weeks After the Contracts Were Submitted to the Supply Field

Confectionery Equipment and Supply Firms Who Have Reserved Exhibit Space:

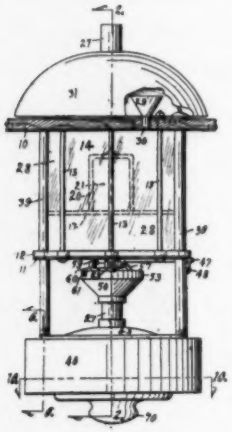
as of March 10, 1928

The Deline Mfg. Co.
Arvey Manufacturing Co.
Wm. M. Bell Co.
Betts Products Co.
Bondy Edelmann Imp. Co.
B. H. Bunn Co.
Elder & Robinson.
Food Material Corp.
Knickerbocker Case Co.
H. Kohnstamm & Co.
Fred Lauer.
Savage Brothers.
H. Schultz & Co.
The T. M. Sheppard Co.
Stadler Photographing Co.
W. J. Stange Co.
United Chemical & Organic Prod. Co.
White-Stokes Company.
Staley Sales Corp.
Finnell System, Inc.
Penick & Ford.
Clinton Corn Syrup Refining Co.
C. M. Pitt & Son Co.
Crystal Gelatine Co.
Essex Gelatine Co.
Harry L. Friend.
Merrow Brothers.
J. W. Greer Company.
Associated Wooden Ware Manufacturers.
National Equipment Company.
Package Machinery Company.
Universal Candy & Chocolate Machinery Co.
Atlantic Gelatine Company.
National Bundle Tyer Company.
Foote & Jenks.
Baker Perkins Company, Inc.
A. Huhn Mfg. Company.
Blanke-Baer Extract & Pres. Co.
M. A. Brown Paper Box Company.
F. J. Schleicher Paper Box Company.
Vacuum Candy Machinery Co.
Bentz Engineering Corp.
A. D. Shoup Company.
Schrieber Products Company.
Standard Sealing Equipment Co.
McGraw Box Company.
American Can Company.
Bendix Paper Company.
Candy & Chocolate Equipment Company.
H. D. Catty Company.
Corn Products Refining Company.
Thos. W. Dunn Company.
Du Pont Cellophane Co.
J. M. Lehmann Company.
Delft Gelatine Co.
Ferguson & Haas, Inc.
Milligan & Higgins Gelatine Co.
National Aniline & Chemical Co.
The Nulomoline Company.
Peter Cailler Kohler Swiss Choc. Co.
Maurice Raved.
Union Confectionery Machinery Co.
T. C. Weygandt Company.
General Electric Co.
Exact Weight Scale Co.
The Pilliod Cabinet Co.
Hobart Mfg. Company.
Brewster Ideal Chocolate Co.
Thos. Mills & Bro., Inc.
Henry H. Ottens Mfg. Co.
Paper Service Company.
H. O. Wilbur & Sons.
Sugar Sanding Machine Co.
Read Machinery Co.
York Manufacturing Co.
National Tinsel Mfg. Co.
Milwaukee Printing Co.
Ira L. Henry Co.

WHAT'S NEW?

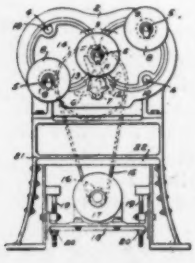
New Patents

1,658,486. Corn-Popping Machine. William G. Howe, Des Moines, Iowa. Filed July 26, 1926. Serial No. 124,963. 31 Claims. (Cl. 53—4.)



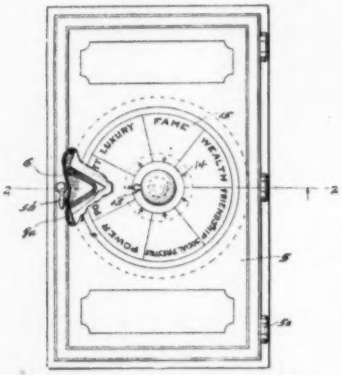
1. In a corn popping machine, a corn popping pan, means for applying heat to said pan, a rotatable hollow shaft for automatically supplying raw corn, salt and oil through the shaft to the pan, means carried by the shaft for agitating the corn in the pan, and a cover for the pan slidably mounted so that it may be pushed upwardly for permitting the discharge of popped corn when the volume of popped corn increases to a certain point.

1,656,005. Candy-Pulling Machine. Edward Kirsch, Milwaukee, Wis., assignor to Allis-Chalmers Mfg. Co., Milwaukee, Wis., a corporation of Delaware. Filed Aug. 24, 1925. Serial No. 51,971. 10 Claims. (Cl. 107—30.)



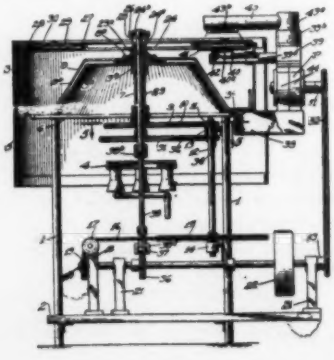
3. In combination, a roller, means comprising a pair of rotary disks and a tumbler for directly engaging and for positively urging said roller along a figure 8 path, and a pin rotatably supported by said roller only.

1,653,456. Candy Box. William A. Frisbie, Minneapolis, Minn. Filed June 4, 1925. Serial No. 34,881. 2 Claims. (Cl. 206—1.5.)



1. A candy box or container for confections, comprising a body having a wall with substantially parallel sides, a lid fitting said body having a wall with parallel sides fitting over said sides, a latch means carried by said body comprising a disk at the underside of said lid adapted to pass under said latch but having an opening adapted to pass said latch, a washer secured to the underside of said disk a stem to which said disk is connected projecting through said lid, a knob on said stem, a spacing washer between said disk and lid, a plurality of circumferentially spaced designations on top of said lid indicating desirable human states, and a pointer on said stem adapted to align with one of said designations when said opening in said disk aligns with said latch.

1,657,592. Candy-Coating Machine. Ira Shafer, San Diego, Calif. Filed Jan. 29, 1926. Serial No. 84,576. 12 Claims. (Cl. 91—4.)



2. In a machine of the class described, an annular foraminous conveyor, a tiltable coating spreading and guiding plate positioned below said conveyor, and a coating discharge spout positioned below said conveyor with its opening in such a position relatively to said plate as to discharge its contents thereon.

12. In a machine of the class described, an annular rotating foraminous conveyor, a coating discharge spout with an opening directed over the upper side of said conveyor, a combined drip-pan and hot reservoir positioned below said conveyor, and a coating conveying means supplying said spout from said combined drip-pan and hot reservoir.

1,654,548. Chocolate. Wharton B. McLaughlin, New York, N. Y.; Celia Brown McLaughlin, administratrix of said Wharton B. McLaughlin, deceased. Filed Dec. 5, 1923. Serial No. 678,780. 5 Claims. (Cl. 99—11.)

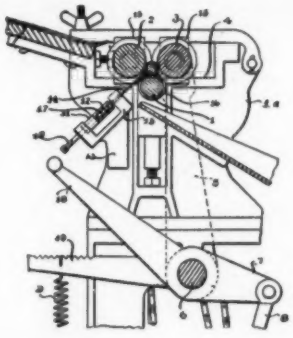
1. A new article of manufacture comprising a mixture of a cocoa mass; albuminous matter extracted from cocoanut; and sugar.

5. That method of producing a food product presenting the physical characteristics of high grade milk chocolate comprising the following steps: producing a fat free from albuminous liquid from cocoanut; adding the same to sugar and concentrating the two; admixing the concentrated mass with a mass of powdered cocoa and subjecting the mixture to a rubbing action; drying the rubbed mass; and thereafter grinding the dried substance with a body of cocoanut.

1,650,356. Process of Preparing Fat-Free Chocolate. Ivan S. Hocker, Philadelphia, Pa., assignor to The Hocker Corp., Philadelphia, Pa., a corporation of Delaware. Filed Oct. 2, 1924. Serial No. 741 281. 1 Claim. (Cl. 99—11.)

The process of preparing fat-free chocolate which consists in heating an aqueous mixture of a cacao product sufficiently to gelatinize the starch constituents thereof, cooling the mixture, subjecting the mixture to hydrolysis sufficient to convert the starchy constituents to sugars, allowing the mixture to stand a length of time sufficient to permit the dispersed fats to coagulate and rise to the surface of the mixture, separating the fat from the surface of the mixture and separating the supernatant liquid from the fat free chocolate residue.

1,652,226. Candy-Forming Machine. Theodore Werner and Charles L. Werner, Rochester, N. Y., assignors to John Werner & Sons, Inc., Rochester, N. Y., a corporation of New York. Filed April 9, 1927. Serial No. 182,335. 4 Claims. (Cl. 107—10.)

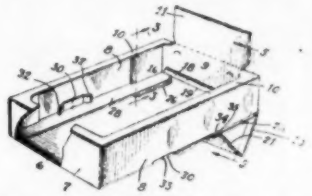


1. In a candy forming machine, the combination with a supporting roll and two candy forming rolls for co-operating with candy on the supporting roll, one of the candy forming rolls being movable relatively to the other to permit the discharge of the candy between it and the supporting roll, of ejecting means mounted to operate between the supporting roll and the other candy forming roll.

73,382. Candy Box. Imogene Kidder, Portland, Oreg. Filed Feb. 14, 1927. Serial No. 20,758. Term of patent 3½ years.

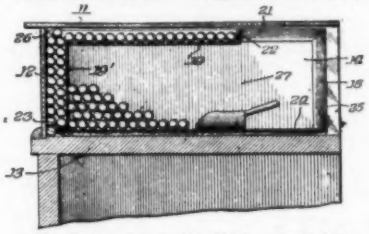
The ornamental design for a candy box, as shown.

1,650,392. Display Container. John J. Ryan and John Gaffney, New Haven, Conn., assignors to National Folding Box Co., New Haven, Conn., a corporation of New Jersey. Filed March 11, 1925. Serial No. 14 620. 10 Claims. (Cl. 306—44.)



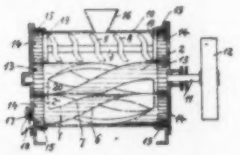
1. A display container and a V-shaped supporting easel carried by and forming with the container a triangular truss with the two ends of the V-structure flexibly and slidably connected at all times respectively with the body of the container to enable the folding and extension of the truss and means operable by sliding said truss into extended position for automatically locking the truss.

16,857. Candy Containing and Displaying Device. Auriol M. Stryker, Chicago, Ill., assignor to E. J. Brach & Sons, Chicago, Ill., a corporation of Illinois. Filed May 6, 1927. Serial No. 189,413. Original No. 1,582,703, dated April 27, 1926. Serial No. 655,401, filed Aug. 3, 1923. 10 Claims. (Cl. 312—118.)



1. A combination display device and container constructed of sheet metal having a pair of side walls and a bottom member fastened thereto, and being provided with upwardly extending retaining means, and partition means extending substantially parallel with and adjacent to the top and front of the side walls and forming a display chamber therewith, the rear end of said partition means being bent up to form a retaining flange positioned a distance forward of the rear of said device and of said bottom retaining means, in order to give the appearance of withdrawing the goods from the display chamber and from a full container.

1,656,164. Apparatus for Milling Chocolate and Like Plastic Materials. Theodor Bragard, Hamburg, Germany, assignor to Macao-Walzenmuhlen-Gesellschaft mit beschränkter Haftung, Hamburg, Germany. Filed May 10, 1926. Serial No. 108,170, and in Germany Dec. 5, 1925. 9 Claims. (Cl. 83—12.)



1. Apparatus for milling chocolate and like plastic materials comprising a central roll, planetary rolls mounted for rotation around said central roll and also around their own axes, said rolls co-acting directly with said central roll and with one another, certain of which planetary rolls are formed with passages opening peripherally of said rolls so that the material can pass transversely of the longitudinal axes thereof, said passages extending longitudinally of said rolls and having the walls thereof obliquely directed to move material entering said rolls, in a longitudinal direction.

Answers to February Puzzle Pictures

No. 7—Peaks (Mason, Au Magenheimer Co.)

No. 8—Life Savers

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Let us be your package counsellors

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